THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

Virginia Independent Oil Men's Association, Richmond Hotel, Richmond, Va., May 15, 16.

National Oil Scouts Association of America, Fort Worth, Tex., May 20, 21.

Natural Gasoline Association of America, Mayo Hotel, Tulsa, May 21, 22, 23.

Open oil industry conference to consider program at Conference of Weights and Measures, Washington, D. C., June 3. Communicate with Dr. Anderson, American Petroleum Institute, 250 Park, Ave., New York, N. Y. for meeting place.

Conference of Weights and Measures, Washington Hotel, Washington, D. C., June 4. (Grease measuring devices to be discussed).

Independent Oil Men's Association of New England: Middletown, Conn., June 12; Wollaston, Mass., July 10; Fall River, Mass., Aug. 14; Providence, R. I., Sept. 11; Worcester, Mass., Oct. 9.

West Virginia Oil Marketers Association, Daniel Boone Hotel, Charleston, W. Va., June 13, 14.

North American Gasoline Tax Conference, Book-Cadillac Hotel, Detroit, Mich., Aug. 7, 8, and 9.

Independent Oil Men of America, Stevens Hotel, Chicago, Oct. 21, 22, 23.

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HEADS of the oil field supply and equipment manufacturing companies have always played an important part in the development of the producing industry.

The new president of the Oil Well Supply Co., Benjamin F. Harris, is already a veteran in this work, being for fifteen years connected with the supply business. For a good part of that time he was vice-president and general manager of the Wilson-Snyder Manufacturing Co., of Pittsburgh. He is an engineer by training.

The Wilson-Snyder and Oil Well Supply companies were recently merged. Oil Well Supply is a household name in the producing industry. Wilson-Snyder has specialized in development of hot oil pumps for refiners. It is also a manufacturer of drilling and pumping equipment for producing fields.

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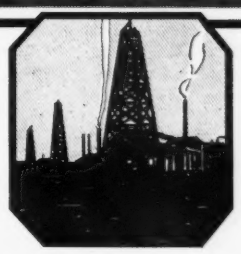

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Vol. 21 CLEVELAND, MAY 15 No. 20

Demand for Oklahoma Crude Growing, Actual Proration Is Ended

By Lawrence E. Smith
N. P. N. STAFF WRITER

FOR all practical purposes, proration of crude oil production in Oklahoma comes to an end May 15, at least temporarily.

The Prairie Oil & Gas Co., principal purchaser of crude in the state, has indicated a disposition to increase the price of Mid-Continent light crude.

Without proration, it is likely the state will show an increase of 30,000 barrels in daily average production for some time. Not all this oil, however, will go to the Prairie, which claims it needs 40,000 barrels more new oil a day to meet its customers' needs.

All told, market demand for Oklahoma crude is now in excess of the 650,000 barrels daily figure to which it is held by the order of the state corporation commission in force since Feb. 15, as a local conservation measure.

The above developments were brought out at a meeting of Oklahoma operators May 9 called to consider the general situation in the state as regards supply and demand for crude.

The meeting specifically considered the petition filed with the state corporation commission by Umpire Ray M. Collins asking that the present 650,000-barrel limit be retained, but making restriction by proration cover all pools in the state producing more than 100 barrels per well daily. The present order covers only the Seminole district fields.

The vote on this showed opinion divided. The Prairie Oil & Gas Co., its subsidiary, the Producers & Refiners Corp., and the Sinclair Oil & Gas Co., were against continuing proration. They have been drawing on their crude stocks. The proposal was then submitted to operators to give as their opinion that market demand for crude is about 725,000 barrels daily and asking the commission to fix the restriction figure at that amount temporarily, modifying that figure if market demand for crude warranted. This was adopted but not unanimously.

By resolution the state commission also was asked to continue until July 1 hearing on the Collins petition to hold proration to the present 650,000-barrels figure.

The action taken by operators at the meeting was a little puzzling, even to some of those present, but it really means this:

Oklahoma has not wholly "lifted the lid" as the saying goes, but has asked the corporation commission to recognize the seasonal fluctuation in demand, to retain jurisdiction of the case and to be in shape, should new fields produce oil in excess of market requirements, to apply proration again.

UMPIRE Collins is presenting to the commission a letter, drafted by W. N. Davis vice-president of the Phillips Petroleum Co. and approved by the meeting, saying it is the opinion of operators that the present market demand is 725,000 barrels daily and asking that a temporary order be issued accordingly. Further, it is asked that the commission make immediate investigation of the market demand and modify the temporary order if it sees fit and that the commission, on its own initiative, make other investigations at intervals of 30 days in order that a proper relation may be maintained between supply and demand.

The decision of the meeting was not reached without difference of opinion. At the outset, Wallace C. Franklin, vice-president and counsel of the Tidal Oil Co., made an earnest argument for continuance of proration. Mr. Franklin, as chairman of the interior regional committee of the American Petroleum Institute, has devoted the greater part of his time

Commission Tilts Lid

(By Telegraph)

TULSA, May 14.—Oklahoma corporation commission yesterday signed order fixing limit of states production at 725,000 barrels daily and continuing hearing indefinitely on petition before it which asked for a 650,000 barrel limit. The order also said that the commission would investigate from time to time the actual market for Oklahoma crude and make modifications of the present tentative order that overproduction might be avoided.

and energy to the conservation program for the past two months. Although the A.P.I. plan is dormant, Mr. Franklin wanted to see its broad principles continued within states.

"We have sought for two and one-half years to bring about the condition that would have resulted within the next 60 days with proper cooperation," said Mr. Franklin. He then expressed a doubt that the commission, lacking united opinion by the Oklahoma operators, would extend the order as prayed for in the petition before it.

"Fortunately," he said, "we are not dependent upon the commission. It is in our power to continue by voluntary cooperation, the effort we have been making for so long. I believe this: We should make an effort to get the commission to extend the order. If they do not, we should voluntarily agree to hold Seminole as it is until July 1. Our operating people believe that after that date, proration will not be necessary.

"Oklahoma has taken the lead in proration. Texas and California are following that lead and are making a bona fide effort to hold down their production. We cannot expect them to continue if we do not. If we continue 60 days, we will then be in position to produce wide open without criticism."

Here he read a telegram from E. B. Reeser, president of the American Petroleum Institute, who was in California, saying that the California situation was hanging in the balance and urging Oklahoma operators to stand fast.

W. N. Davis then took the floor. He said that he was in almost complete agreement with Mr. Franklin, but he differed with him on the practicability of voluntary effort, lacking a corporation commission order. As for an order, the very foundation on which the commission would continue the 650,000-barrel proration is now lacking, Mr. Davis said.

His information indicated that drafts on stocks of Oklahoma oil now total about 50,000 barrels daily. He doubted whether the commission has the legal authority to order a limit on production so far below market demands.

"It occurs to me that perhaps sufficient thought has not been given to the variation in demand throughout the year," said Mr. Davis. "It seems logical that proration orders should take that factor into account. In February, 650,000 barrels was agreed upon as the demand. It is now much greater.

"It is fine to reduce stocks, but those who own them say they do not want to reduce at a loss. I cannot quarrel with them. We should raise the limit, have the commission examine the situation from time to time, and change the order as required by the facts."

C. C. Herndon, vice-president of the Skelly Oil Co., supported Mr. Franklin's position. He said he felt, in the long view, that it is best to hold to 650,000 barrels daily until July 1. He believed that any company making drafts on stocks would be better off in the long run in temporarily penalizing themselves. He moved that the meeting express itself in approval of the petition before the commission. R. M. Young, president of the Carter Oil Co., seconded.

This sentiment-testing motion brought out 16 votes for, four against and four passed. The Prairie, Producers & Refiners, Sinclair and T. B. Slick were the opposition. Mr. Herndon then said it was clear that, without the support of the Prairie and Sinclair, controlling about a fourth of the Seminole production, no progress could be made in continuing the present proration plan.

Prairie's Need for Crude Presented

THEN came the moment for which all had waited. W. S. Fitzpatrick, chairman of the board of the Prairie, arose and made public statement of that company's situation. He was just as earnest as those who had spoken in defense of the 650,000-barrel limit. Some of his assertions were:

"Neither of the gentlemen who have said it is a small matter for the Prairie to draw 40,000 barrels daily from its storage to supply its customers would slow down their refineries to let the Prairie have a little oil.

"We are still carrying the burden we undertook in 1927 of an 11 million barrel surplus. We have helped absorb the surplus for the past five years. Oklahoma and Kansas in 1928 produced six million barrels less than was used. It has been said that the market is not an economic one. That hasn't been said by anyone who wanted to get more Oklahoma crude.

"Every day connections are being changed because of premium payment. There is now a greater burden on Oklahoma and Kansas for sweet oil. The decline in production in Illinois, Indiana, Kentucky and the whole Appalachian system has compelled those who got their supply there to come to the Mid-Continent.

"Our 15 customers, with but one exception, say they have no substantial stocks. (The argument had been made that huge gasoline stocks were being piled up in refinery territories supplied by Mid-Continent crude.)

"I think this proposition of overproduction is a question of localities. Oklahoma hasn't produced in 1928 or 1929 any crude that could go to other than its natural markets, unless it is crude that is going south that could be replaced with Texas or California oil. The people who are using the crude that is going north say they need it. They are the best judges.

"It is nonsense, if I may use the word, for Oklahoma to curtail its production, with its natural market calling for the oil. The disposition to advance prices is thwarted by the impression that we can produce more oil than we can use. The thought prevails that we have to fight here in Oklahoma to keep the oil from going to waste, that all we have to do is open the valves and take out unlimited amounts.

"It is not fair for Texas and California to say that, unless we depress below our natural market, they will flood us with oil. We led the way—we curtailed. If we had gone ahead, without restraint, we would be in position to try to intimidate somebody.

"The territory that is relying on the Mid-Continent is not taking somebody else's markets. The refineries which demand Mid-Continent sweet oil are selling their products in their natural markets, in territory that is contiguous. They are not reaching out to crowd some other section of the industry out of its economic territory.

"I DON'T believe we have a corporation commission that will issue an order cutting production when there are consumers asking for more oil. The folks who are asking for this order are people who have production in West Texas.

"The Prairie Oil & Gas Co. is not interested in all phases of the business. It is only a producer. It gets no profits that come to the refiner or the marketer. We drew on our stocks for 12 months in 1928 and I cannot understand where the gentlemen who have spoken get that figure of two months that we are to penalize ourselves.

"Now, we do not buy oil in periods of surplus to turn around and sell at a loss in periods of excessive demand. We are not converted to the notion that the people who tell us they want our oil do not know their business. We don't believe they are starting out deliberately to spoil their business.

"We have emptied a number of our tanks in the last year and, if a surplus occurs, we will be here to help you take care of it. We do believe, however, that when we are short of

Airplane view of the Mission pool, Seminole county, Okla., one of the fields in the prorated area.
(Copyright by Clarence Jack, Tulsa)

oil, we should not be held down by a decision reached a long time ago.

"The commission has the right to limit production to market demands to prevent waste. Who would say that any such necessity exists today?

"We have fiddled around with the government until we are frightened at the thought of trying to get a fair price for our oil. I see somebody smile as though to say, 'You were one of the fiddlers.' Well, I'll confess that I was.

"The Prairie Oil & Gas Co. is willing to buy from anyone who will sell, 25,000 to 40,000 barrels of Oklahoma crude above what it is now getting. Further proration at this time is nonsense."

At the conclusion of Mr. Fitzpatrick's talk, Mr. Herndon moved that the formal vote already taken be rescinded because of the refusal of Prairie and Sinclair to agree to further proration and that the meeting endorse Mr. Davis' letter to the commission, asserting that the demand for Oklahoma crude is now about 725,000 barrels daily.

Rush Greenslade, vice-president of the Gypsy Oil Co., said he thought the frank and honest thing to do would be to ask the commission merely to retain jurisdiction of the case, continue the hearing on the petition before it to July 1. Issuance of an order fixing the limit at 725,000 barrels—more than the state can now produce—would be largely a sham, he said.

On the vote to endorse the Davis letter to the commission, W. C. Franklin stood by his guns and voted no. He said that for the commission to set the limit at 725,000 barrels would mean that proration in Oklahoma was at an end. "School's out," he said, "and I can't vote for something which means that result."

President Young, of the Carter, who had voted yes, asked the chairman to change his vote and put him in opposition, with Mr. Franklin. E. R. Filley, division manager of The Texas Co., likewise changed his vote.

Prairie's outlet for oil it produces and buys has steadily increased and currently the Prairie Pipe Line Co., all but a small quantity of whose shipments are oil tendered by the Prairie Oil & Gas Co. is moving more than 200,000 barrels daily.

Prairie Oil & Gas Co. sells to such customers as the Standard Oil Co. of Indiana—its biggest buyer—Lubrite Refining Co., White Star Refining Co., Paragon Refining Co., Sun Oil Co., Standard Oil Co. of Ohio, National Refining Co., Pure Oil Co., Atlantic Refining Co., Tide Water Oil Co., Standard Oil Co. of New York, and other refiners in the middle west and eastern United States and Canada. Vacuum Oil Co. is also a customer, oil being shipped south through Prairie lines to Gulf Coast and then moved by boat to the Atlantic Coast.

Vacuum Buys Fourteen Burbank Leases

(By Telegraph)

TULSA, May 14.—Vacuum Oil Co. has made its biggest bid for lubricating base crude in the Burbank district of Osage County, Okla., and its entry as a producer in the Mid-Continent by buying all the Burbank properties of the Lewis Production Co.

Fourteen quarter sections of Osage leases producing about 1800 barrels daily net from 24 wells are involved in the deal which will be formally completed as soon as the Department of the Interior approves the sale.

There are about 70 locations yet to drill on the properties, which are in the east and southeast extensions to the main pool. Mid-Continent Petroleum Corp., is now buying most of the oil with a part going to the Johnson Oil Refining Co. The Vacuum is already a large buyer of Burbank crude, mainly from the Phillips Petroleum Co.

Lewis Production Co., headed by H. J. Parker of Pittsburgh and managed by George Parker, Tulsa, retains several leases elsewhere in the Osage and has production in Kansas and north Texas. The price paid was not made public, but is understood to be in the vicinity of $3,000,000.

One-Stop Stations

The Tire Companies Help Their Dealers to Build

By Roger B. Stafford
N. P. N. STAFF WRITER

One-stop service is featured at this super service station of the Hoffman & Werk Co., Cleveland

AKRON, O., May 12

LARGE tire companies, in helping many of their dealers to get into the super or one-stop service station business, believe they are keeping abreast a trend in motorists' buying habits.

Tire manufacturers also desire to stabilize their retail outlets by helping their dealers earn more profits than narrow tire margins have permitted. They want their dealers to get more frequent contacts with possible tire buyers. They want their dealers to have attractive places of business in prominent locations.

The super or one-stop station is the best opportunity to accomplish these results, the merchandising organizations of large tire manufacturers have decided.

When a tire manufacturer believes one of his dealers is ripe for expansion he does not allow the dealer to get into the one-stop station business in any blind or haphazard way. Many helps are offered from headquarters in Akron.

Some tire companies have real estate departments which pass on the dealer's proposed station site. One will supply complete plans for the station and most have plan books with suggestions for variously priced stations which the dealer may take to his local architect. Tire company engineers may recommend the latest in tool and device equipment for stations which they have investigated at the equipment makers' factories.

One company is supplying the dealer with money to build stations on approved sites, and is even going into partnership with him. Merchandising helps, advertising, accounting systems, and analyses of the dealers' markets are given the dealers all with the hope of making them more substantial merchants who will be able to sell more tires and, from this increased volume of trade and from the sales of other goods and services, to earn greater profits.

The trend in buyers' habits is the demand to get all ordinary needs with only one stop. Merchandising experts of the tire companies believe that the day is waning when a motorist will be content to go one place for gasoline and oil, and possibly car lubrication; to another place to have his battery checked, to another to have a tire repaired and to still another to have his car washed.

Some dealers include brake testing and relining and wheel aligning in the frequent requirements of motor cars and as services which should be part of the super service station's offerings.

Firestone Tire & Rubber Co. is the manufacturer that is giving direct financial assistance to its dealers to build one-stop stations. It is taking almost a half interest in the stations it and some of its dealers are building in many parts of the United States.

FIRESTONE also gives its dealers many other helps. It has a real estate department, equipment department, sales promotion department, and business research department, all of which are working to promote sales of Firestone tires by helping dealers to become better merchants.

Firestone intends to spend large sums of money in developing super

station outlets for its tires. It has already spent $2,000,000 in Florida where with its dealers it has built a dozen large one-stop stations. Last fall it completed a $500,000 station in Los Angeles, the most expensive layout it has so far developed. It has just completed one in Atlanta and one in Boston.

THE Firestone stations, said Harvey S. Firestone, Jr., cost from $50,000 to $250,000 and average approximately $100,000 each. The size usually depends on the size of the market the station is to serve and the possibility of growth of the particular market. Some miscalculations have been made, Mr. Firestone said, citing the case of the Los Angeles station which had to be enlarged shortly after it was completed.

Firestone dealers select their own oil and gasoline connections at present. Some of them have railroad sidings at their stations and tank car storage. They buy in tank cars lots and in the Firestone organization are known as Group 1 stations.

Another class of dealers maintains its own bulk plant but at a distance from the service station. This class is known as Group 2 dealers.

There is a Group 3 made up of dealers who buy by tank wagon from oil and gasoline jobbers or distributors.

Eventually, said Mr. Firestone, super service station owners of a district may buy collectively but that will be a development of the future. This development would dovetail with rumors which have been afloat in Florida in recent weeks that Firestone intended to build a tide water terminal for tanker shipments of gasoline from Gulf or California refining centers and to serve other Florida or southeastern points by barge or tank car.

Mr. Firestone said no deal had been made with an Independent refiner and that his company, Henry Ford and the unnamed Independent refiner were not forming a new distributing company to blanket the United States with super service stations.

The Firestone dealers' stations have these goods or services: Tire and tire repairs, oil and gasoline, car lubrication, batteries which shortly will be Firestone's own make of batteries, brake testing and relining wheel aligning, and a line of automobile necessities such as repair kits, lamp bulbs, spark plugs, and other small articles for which there is a steady demand.

Mr. Firestone, his father, who is the head of the Firestone company, and his brother recently returned from a visit to southwestern and California oil fields where they studied conditions in the oil industry.

B. F. GOODRICH CO. does not finance dealers' stations, although it recommends their construction when a market warrants. This company has a staff of market survey specialists—university and business trained men.

The Goodrich company has made surveys of the market possibilities of most of the larger cities of the United States. These surveys are made even before a dealer in a city may even consider a super service station. But when he does get the idea that he can make a larger profit every assistance is given him except financing his project.

THE Goodrich company probably has on file in Akron a survey of the dealer's city. This shows the past and expected growth of that city; the direction the growth may take; the flow of automobile traffic and the influence of traffic on business. The city may be zoned as to markets. The survey contains an analysis of the possible commercial tire business.

The survey also shows the average income of the city's inhabitants, the stability of their income, where persons of various income classes live, the buying habits of the people, and whether it is a "Saturday night" town or not.

If the dealer so desires Goodrich will supply him with plans for a station suitable for the lot the dealer has bought or leased, a station which the company believes will be able to serve the market as adequately 10 years hence as today. Equipment for the station will be that which has been approved by the company's engineer who keeps in constant touch with tool and device developments. No obsolete equipment is allowed to go into a new station, although Goodrich buys no station equipment itself.

"It has been necessary for tire manufacturers to improve the type of outlets for their tires and to get into closer contact with consumers," said C. B. O'Connor, head of Goodrich's specialized sales department.

"The tire industry is on a production basis," he explained. "It makes a small profit per unit on a large volume of units. If the outlet is on a small sales volume at a large profit

Kier-Nickles super-service station, Houston, Texas, is a tire dealer built and owned one-stop station. The gasoline service station is an octagonal building with fully covered drives. The auxiliary services are housed in an L-shaped building along the two inside borders of the lot

per unit, there is static all along the line from the manufacturer to the consumer. It then seems that we must get our dealers on the same basis we manufacturers are on and to do that we must have some means of moving our product in a straighter line and in larger volume to the user."

Mr. O'Connor also said that his company might not follow the exact marketing lines of its competitors but that it would always be found in the competition. He said the company was 100 per cent for its dealers and in working out a sales system for them it was endeavoring to help them earn larger profits. He said the company intended to continue to sell through dealers and would not enter any chain store proposition.

Its dealer helps include an accounting system with definite schedule of accounts, depreciation rates, and other items which, when followed, aim to keep the dealer's business on a sound foundation. There is cooperation in advertising and when a dealer wishes to build a one-stop station there is architectural service at his command.

Goodyear Tire & Rubber Co. for several years has provided station ideas for its dealers but, when a dealer decides to build a station, he is told that he should consult a local architect who will be able to assume complete supervision of the erection of the building.

Goodyear helps its dealers with their merchandising problems but it does not finance their stations.

Tire dealers who are putting up these one-stop stations are not price cutters in selling gasoline and oil, tire company officials say. The station builders have already demonstrated that they are good business men, it is pointed out, and good business men know they cannot hope to keep alive if they sacrifice a profit on a staple commodity like gasoline.

The whole super or one-stop station idea, according to the men who are studying the buying habits of the American people for the Akron tire manufacturers, is harmonious with the evolution of buying habits.

Competition among sellers has lead buyers to expect greater service, these tire merchandisers say.

Lower prices and sturdier tires have also had an effect on buying habits. Today people are paying less money for tires than they paid 12 or 15 years ago and the tires are trouble free for four or five times the distances of former tires.

Formerly users waited for blowouts before buying but today many car owners buy when the rough treads are worn off. But the interval between buying is generally longer—new tires every year a decade ago but new tires only every other year today. Contacts with car owners are therefore less frequent.

There was a time when a tire dealer maintained a small fleet of service trucks to give road service. Today the road service required is only a fraction of what it was a few years ago. For example, the Instant Tire Service of Akron, Miller Rubber Co. dealer, several years ago kept five and six service trucks on the road. Today it has only one truck in active service and one held for emergencies.

This change has kept most of the one car owners out of the tire service stations and out of contact with the tire dealer. The super service station is intended to maintain the contact with the individual consumers through some medium other than tires.

The medium therefore which the motorist uses most frequently is the one tire men favor. That medium is gasoline.

Grease Pump Specifications Urged by State Sealers

CLEVELAND, May 13.—Oil jobbers and all other operators of greasing stations may be compelled within the next year to throw away the equipment they are now using to inject grease into the transmissions and differentials of automobiles. They may have to replace them with new grease guns and pumps that measure the lubricant accurately in pints instead of in pounds.

Such a proposition will be considered at the national conference on weights and measures to be held in Washington, June 4. The conference is made up of state and city sealers of weights and measures and similar officials from all over the nation. A tentative set of specifications prescribing the use of grease guns calibrated to measure by volume instead of by weight was adopted last year at the national conference.

Oil men who believe there is no need for such drastic change and that it would cause a needless burden on the industry, are invited to meet in an open industry conference in Washington on June 3, the day before the weights and measures conference opens, to discuss the situation.

The invitation to this meeting of oil men is issued by Dr. R. P. Anderson, technologist of the American Petroleum Institute. Dr. Anderson asks that all companies who plan to be represented let him know as soon as possible.

It is to be expected that, if the sealers of weights and measures succeed in making final the tentative specifications for grease guns, these specifications will presently be translated into laws on the books of the various states.

Metering systems for dispensing gasoline to the motorist also are to be considered at the conference on weights and measures.

Way to Manage Exposition

(By Telegraph)

TULSA, May 14.—President William G. Skelly, of the International Petroleum Exposition, announced Monday the appointment of William B. Way, of Pittsburgh, to manage this year's exposition. Mr. Way for several years was secretary of the old Natural Gas Association of America. Since his resignation he has been in the supply business. He will assume his new duties June 1.

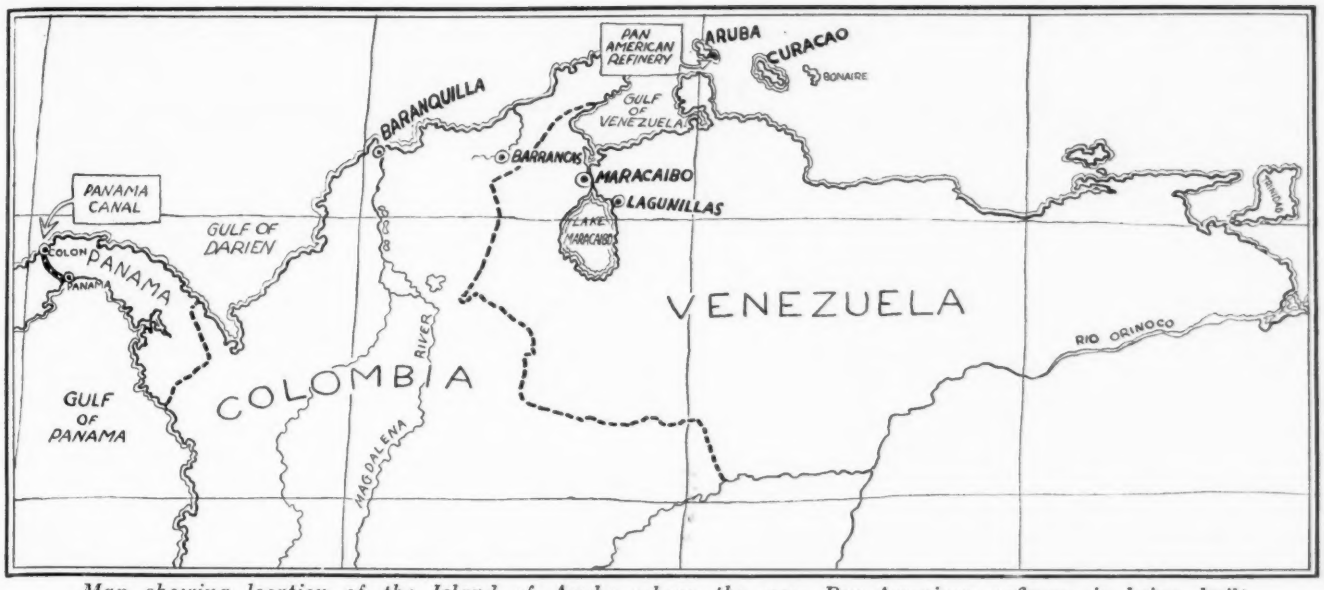
Crude Oil Tanker Plies Great Lakes Now

CHICAGO, May 13.—"Panoil," a tank ship with a capacity of 16,000 barrels, has been added to the Great Lakes fleet of Standard Oil Co. of Indiana, to ply between Muskegon, Mich., and Whiting, Ind., bringing crude oil to the refinery. Starting very shortly she will be making a round trip every two days, thus moving about 8000 barrels a day from Muskegon to Whiting.

Panoil was leased by Standard from Pan-American Petroleum Corp., about six weeks ago. At the rate of about 10 miles an hour she has been on her way from the Atlantic coast since. She is 375 feet overall, 40 feet in the beam and draws 16 feet of water.

In the past, Standard has been buying about 3000 barrels a day of crude from the Muskegon field. About 1000 barrels from the shallower producing level (the Travers formation) is moved daily by tank car to Standard's refinery near Saginaw, Mich. Twice as much crude from the lower pay (the Dundee formation) has moved by rail daily to Whiting.

The Travers production will continue to move to Saginaw as before but four times as much Dundee oil will come to Whiting by water as has been coming by rail. This will give a measure of relief to the Michigan producers. The Muskegon field now has a potential daily production of 30,000 barrels. Other refiners in this section have been buying about 2000 barrels of Muskegon crude a day.



Map showing location of the Island of Aruba where the new Pan-American refinery is being built

Pan American's Refinery at Aruba Is Half Done and Running

CLEVELAND, May 10

THE big refinery of the Pan American Petroleum & Transport Co., which has been under construction for some months on the island of Aruba, Dutch West Indies, is now half completed. Several topping units together with the treating and finishing facilities and the electric power plant are now in operation according to a statement sent to NATIONAL PETROLEUM NEWS by Thomas S. Cooke, general manager of the company.

Dr. W. W. Holland is resident manager of the refinery. He has been associated with the Standard Oil Co. of Indiana for many years and until recently was general superintendent of the Standard of Indiana's Wood River, Ill., refinery.

One advantage that the designers of this refinery enjoyed was that they knew what the source of their crude supply was to be and they knew the nature of the oil. Consequently, according to the company statement, they were able to lay out a refinery that would handle the crude to be processed with the greatest possible efficiency and the best possible results.

As to the crude, the statement says:

"The refinery will refine crude from the Lake Maracaibo district production of the Lago Oil & Transport Co., Ltd. The oil is produced for the most part from lands lying under the surface of Lake Maracaibo. The oil after being produced from below the surface of the lake is pumped to shore tankage from which it is loaded into specially designed shallow draft tank steamers at two points on the lake, La Salina and Lagunillas. The Lago company now has a fleet of about 20 of these shallow draft tankers in service, carrying oil from the stations in Lake Maracaibo to the refinery."

Distances and Freight Rates To New York

From	Distance Miles	Freight Rate* per barrel
Aruba	1980	36 cents
Curacao	1980	36 cents
Colon (East end Panana Canal)	1974	
Tampico	2030	39 cents
New Orleans	1732	35 cents**
Los Angeles (Via canal)	4930	$1.00

*Freight rates change according to the supply and demand for tankers but are always in the same proportion.

**Rates from all Gulf ports to New York are the same as from New Orleans.

The refinery is located on the island of Aruba and the company statement describes the island and its location as follows:

"The island of Aruba is a possession of the Holland government lying in north latitude 12-25, longitude west 70, and is approximately 20 miles from the nearest point of the mainland of Venezuela. The island is about 4 miles wide and 20 miles long and lies in a northwest-southeast direction.

"The Pan American Petroleum Corp. and the Lago Oil & Transport Co., Ltd., have a location at the extreme southeast point of the island totaling approximately 2000 acres on which the refinery and terminal facilities are being constructed. Immediately adjacent to this site the Lago company has developed a completely protected harbor which is devoted exclusively to the business of this company."

Concerning the operations of the company and the nature of the crude, the company statement says:

"The refinery is both a topping and cracking plant. The amount of gasoline existing naturally in Venezuelan crude is considerably below the amount ordinarily existing in crude oils such as are produced in the Mid-Continent and Texas fields of the United States.

"The crude is in several respects distinctly different from the usual crude oils found in the United States. The Venezuelan crude is of asphaltic base, high in sulfur content, low in gasoline and kerosene content and considerably heavier and more viscous than most of the crude oils produced in the United States.

Although no mention is made in the company's statement as to the crude capacity of the plant, it is generally understood that the Aruba refinery will be running about 85,000 barrels of crude a day by midsummer and that its capacity when finished will be about 110,000 barrels a day.

Natural Gasoline Output Fails to Grow As Fast as Refinery Gasoline

By Allen S. James
N. P. N. STAFF WRITER

TULSA, May 11

NATURAL gasoline production in the United States in 1928 increased 9.4 per cent or 152,400,000 gallons, while production of refinery gasoline increased 14.6 per cent, according to Bureau of Mines figures.

This situation was almost a complete reversal of the one for 1927. The increase in natural gasoline production that year over 1926 was 20 per cent, while the increase in refinery gasoline production was 8.4 per cent.

The natural gasoline industry did not have, in 1928, another Seminole pool to handle as it did in 1927. It will be recalled that about the middle of 1927 the production of natural gasoline increased tremendously because of the new Seminole district oil fields in Oklahoma. This field maintained a high rate of production throughout most of 1928, but the increase in production in the United States had to come from some of the smaller fields adjacent to the original Seminole district, and to the new fields in California.

The new West Texas fields cut no figure last year. While the potential crude oil production in West Texas is enormous, there have been only a small number of natural gasoline plants put into operation. Although there doubtless will be some plants built this year. No tremendous flush production is to be expected.

Refiners experienced a hard year in 1927. Many plants were partly or wholly closed. Th percentage increase over 1926 accordingly was relatively small. Conditions were considerably improved in 1928 and many of the plants which had been shut down resumed operations. New and enlarged equipment was installed. The new West Texas refinery district sprang up. The production of refinery gasoline accordingly was increased materially.

California led in natural gasoline production increase in 1927 but Oklahoma and Kansas set the pace in 1928. The increase in 1928 in Oklahoma and Kansas amounted to 83,000,000 gallons, and in California to 55,500,000 gallons.

In Table No. 1 is shown the production of natural gasoline in Oklahoma and California by months for 1928. It will be observed that by May production in Oklahoma had dropped somewhat from the January figure and production continued to remain under the 50,000,000 gallon per month figure until October. That month production increased materially and continued to gain each month until the close of the year. This was due primarily to the decline in production and to proration in the Seminole field, followed later in the year by increased natural gasoline production as adjacent fields such as St. Louis, Maud and Mission were developed.

California natural gasoline production sagged somewhat in February and March but in April started upward and continued to show an upward trend throughout the remainder of the year.

Production of naturals by districts for both 1927 and 1928 and the percentage changes are shown in Table No. 2. Production was lower in the Illinois and Kentucky district, and un-

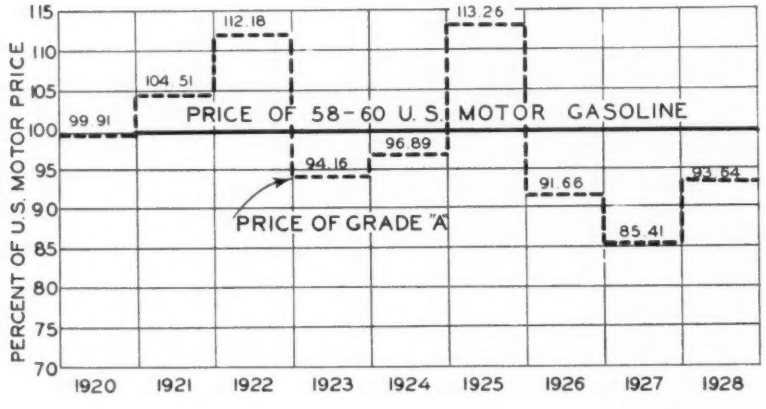


Fig. 1 (above)—Chart showing relationship of the price of grade A, natural gasoline, to 58-60 U. S. Motor in Group 3 (Oklahoma)

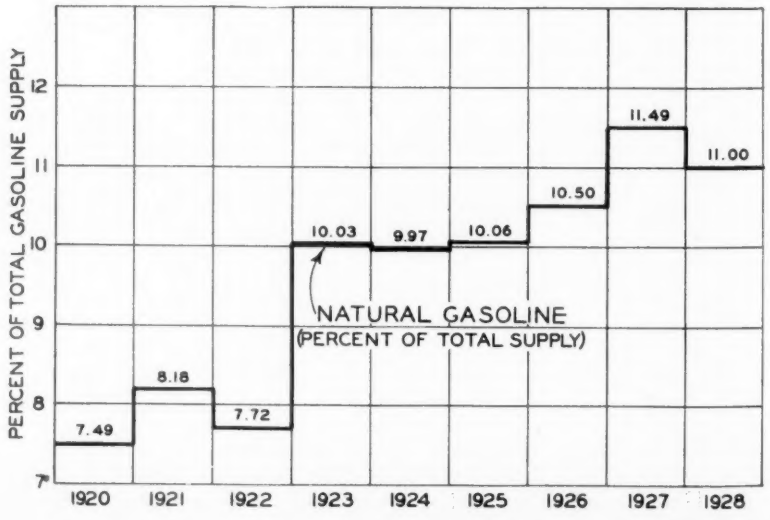


Fig. 2 (right)—Relationship of natural gasoline production to total gasoline production for past nine years

changed in the Rocky Mountain district. Increases were made in all other districts, with Texas showing the smallest percentage change.

The large increase in natural gasoline production in 1927 pushed prices to new low levels but they recovered somewhat in 1928, as is shown in an accompanying chart, Fig. 1, which shows the relationship of the price of grade A to 58-60 U. S. Motor in Group 3 for the past nine years. In 1928 price of grade A brought 93.64 per cent of U. S. Motor as compared with the low mark in 1927 of 85.41 per cent. The 1928 percentage was slightly higher than that of 1926.

Table No. 1

Oklahoma and California Natural Gasoline Production by Months in 1928.

Month	Oklahoma	California
Jan.	50,400,000	42,000,000
Feb.	50,700,000	38,700,000
March	51,900,000	41,700,000
April	50,400,000	43,000,000
May	49,700,000	45,200,000
June	48,800,000	45,500,000
July	49,500,000	48,400,000
Aug.	48,500,000	48,700,000
Sept.	49,900,000	46,200,000
Oct.	54,100,000	48,400,000
Nov.	55,400,000	47,600,000
Dec.	57,000,000	49,800,000
Total	616,300,000	545,200,000

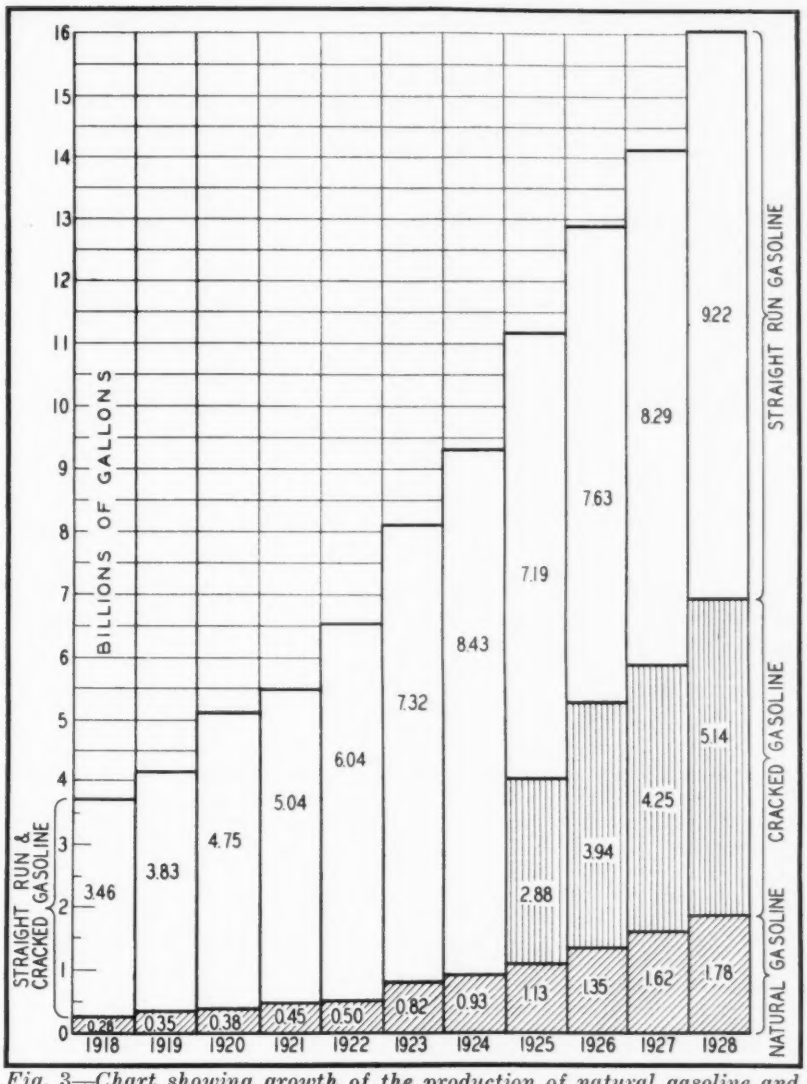


Fig. 3—Chart showing growth of the production of natural gasoline and refinery gasoline and showing composition of the nation's gasoline supply except benzol

Another chart, Fig. 2, shows the growth of natural gasoline production as compared with the total gasoline supply of the country. It will be observed that in 1928 natural gasoline production represented 11 per cent of the total gasoline supply as compared with 11.49 per cent in 1927 and 10.50 per cent in 1926. The figures are obtained for purposes of the chart by deducting the amount of natural gasoline blended at refineries from the total gasoline production of refineries and adding the total production of natural gasoline as reported by manufacturers.

A chart, Fig. 3, shows the composi-

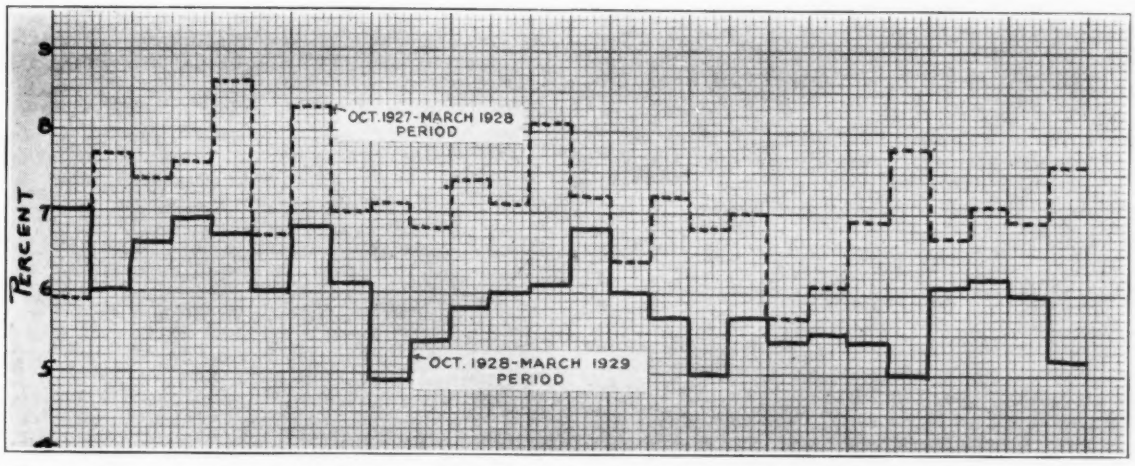


Fig. 4—Chart showing the percentage of natural gasoline to total gasoline produced by weeks at Mid-Continent refineries reporting weekly operations to NATIONAL PETROLEUM NEWS. *Two periods contrasted are for the six months of October, 1927, to March, 1928, inclusive, and October, 1928, to March, 1929, inclusive*

Table No. 2

Production of Natural Gasoline By Districts 1927-1928
(In Gallons)

	1927	1928	Per cent Change
Appalachian	94,400,000	99,700,000	+ 5.6
Ky. & Ill.	16,000,000	14,200,000	—11.2
Okla. & Kan.	578,500,000	652,000,000	+12.7
Texas	316,600,000	331,000,000	+ 4.5
La. & Ark.	82,500,000	88,000,000	+ 6.7
Rocky Mt.	45,900,000	45,900,000	.....
California	489,700,000	545,200,000	+11.3
Total	1,623,600,000	1,776,000,000	+ 9.4

tion of the gasoline supply of the country since 1918, in billions of gallons. The proportion of cracked gasoline is shown for only four years since government figures are not available for the years prior to 1925.

While Fig. 3 shows natural gasoline has maintained its consumption ratio to other gasolines produced in the United States as a whole, a check of government figures for the six months period of Oct. 1928-March, 1929 inclusive, indicates some of the refining districts used a smaller percentage of naturals for blending that they did for the corresponding period of Oct. 1927-March, 1928, inclusive.

A study of Bureau of Mines figures for the two periods shows a larger percentage of naturals used in the East Coast. This probably was due in part to the greater demand for blending California, West Texas and foreign gasolines. Little change was noted in California and the Rocky Mountain region.

A smaller percentage of naturals was used in Oklahoma and Kansas, while the percentage was higher in Texas. That was probably due in part to the larger percentage of West Texas crude oil refined, the gasoline from that crude being so low in gravity that naturals were required to bring it up to uniform specifications.

A smaller amount of naturals was used in Louisiana and Arkansas.

For comparative purposes the per cent of natural gasoline used to total gasoline production in the Mid-Continent as reported by a majority of refiners to NATIONAL PETROLEUM NEWS each week was charted for the two periods under discussion. The chart, Fig. 4, shows that the per cent of naturals for the recent six months period has been consistently lower than for the other period under discussion. This undoubtedly can be attributed in part to the higher prices manufacturers have obtained for their product through most of the latter period. For the first time in several years prices of natural gasolines the past several weeks have been even with or higher than prices of U. S. Motor in Oklahoma.

Official Program, Eighth Annual Convention
The Natural Gasoline Association of America

Mayo Hotel, Tulsa, May 21, 22, 23

Tuesday, May 21—Morning Session

F. L. Chase, Lone Star Gas Co., Chairman

Welcoming Address: F. L. Chase,
President's Address: H. A. Trower, Phillips Petroleum Co.
Appointment of Committees. Report of Standing Committees.

Noon

Dutch Lunch—Furnished by Natural Gasoline Supply Men's Association.

Afternoon Session

W. A. Melton, Shaffer Oil & Refining Co., Chairman.

Paper: A Review of Fires and Explosions That Have Occurred in the Industry Over the Past Few Years—Emby Kaye, Skelly Oil Co.
Discussion: H. M. Coulson, Sinclair Oil & Gas Co.
Paper: Procedure Necessary to Manufacture and Ship Gasoline Acceptable to the Existing Natural Gasoline Market—A. T. Scherer, Sinclair Oil & Gas Co.
Discussion: S. B. Crooks, Empire Oil & Refining Co.
Paper: Repressuring and Its Effects on the Natural Gasoline Industry—Edward V. Foran, Saxet Oil Co.
Discussion: E. F. Guidinger, Phillips Petroleum Co.

Evening

Stag Smoker—Furnished by the Natural Gasoline Supply Men's Association.

Wednesday, May 22—Morning Session

D. E. Buchanan, Chestnut & Smith Corp., Chairman.

Progress Report on the Research Program of the Natural Gasoline Association of America—Dr. George G. Brown, University of Michigan.

Noon

Dutch Lunch—Furnished by Natural Gasoline Supply Men's Association.

Afternoon

Continuation of Report by Dr. Brown.
Discussion: Led by D. E. Buchanan, as chairman of the session.

Thursday, May 23—Morning Session

A. J. Schlosser, Barnsdall Oil Co., Chairman.

Paper: Gasoline Storage Practice in the Natural Gasoline Industry—G. M. Davidson, Empire Oil & Refining Co.
Discussion: A. J. Schlosser, Barnsdall Oil Co.
Paper: Is Present Gasoline Storage Adequate to Best Serve the Industry?—H. C. Charles, Phillips Petroleum Co.
Discussion: A. F. Wood, Chestnut & Smith Corp.

Noon

Dutch Lunch—Furnished by Natural Gasoline Supply Men's Association.

Afternoon Session

Dr. Lederer, Texas Pacific Coal & Oil Co., Chairman.

Paper: Some Considerations in the Application of Fundamental Analysis to Absorption Tower Operation—Prepared by: W. W. Robinson, Jr., The Texas Co.; P. S. Magruder, General Petroleum Corp.; J. C. Burks, O. C. Field Gasoline Co., and E. R. Cox, The Texas Co. The paper will be read by Mr. Robinson.
Discussion: R. O. Campbell, Skelly Oil Co.
Paper: Report on the Work of the Technical Committee of the Natural Gasoline Association—G. G. Oberfell, Phillips Petroleum Co.
Discussion: R. E. Baker, Shell Petroleum Corp.

Evening

Annual Dance—Furnished by Natural Gasoline Supply Men's Association.

Review of Late Production News

PRODUCTION during the week ended May 11 was on a more steady basis than it has been for several weeks past. Daily average for the country was 2,624,750 barrels, a decrease of 5100 barrels from the week ended May 4, according to the American Petroleum Institute.

Crude imports also were steady. There was a decline of but 9429 barrels daily average. Total new crude supply was 2,871,221 barrels for the week ended May 11, compared with 2,885,850 barrels the previous week.

The largest change in any individual field was in Santa Fe Springs, where production gained 10,000 barrels. Seal Beach gained 5000 barrels and Midway-Sunset decreased 7500 barrels. Long Beach gained 2000 barrels.

Salt Flat field in southwest Texas gained 2400 barrels. Winkler country fell off 3250 barrels and Pecos gained 2350 barrels. Salt Creek fell off 2150 barrels.

Mission pool in Oklahoma made the only sizable change during the past week. It gained 5350 barrels.

Texas, New Mexico, Louisiana

A WINKLER county wildcat in Sec. 17-Blk. B-3, struck eight to ten million cubic feet of gas during the week. It was the Bashara No. 1 Bashara, which after getting the gas, caught fire and burned the rig.

In Pecos county Black et al. No. 1 Pecos Valley, Sec. 22, Blk. 10, topped the pay at 1620 feet, making 800 barrels of oil the first 24 hours from a total depth of 1647 feet.

Skelly Oil Co. No. 1 Joiner, the Lea county New Mexico well completed and shut in some months ago, was partly opened. The well made 537 barrels in 24 hours.

Oklahoma-Kansas

The opening of the Gpysy Oil Co. Wilcox sand wildcat in Sumner county, Kansas, proved the most interesting field event of the week. The well, which topped the sand several weeks ago is making 1800 barrels of 44 gravity oil daily from the Wilcox at 4768-84. Most of the oil is coming from the last five or six feet drilled.

A chat producer about 12 miles south of the Valley Center pool of Sedgwick county, Kansas, was deepened during the week, increasing its production from 300 to 1300 barrels daily. It was the Shell Petroleum Corp., Dickey et al. No. 1 Robbins, in the NW SW of 21-28S-1E, which topped the chat at 3080, and has now been drilled to total depth of 3100 feet. Dry holes have been drilled in both the chat, on top of the big lime, and the Simpson below the lime, between the new well and the Valley Center pool.

Still a third wildcat in Kansas, this time in the western part of the state, is attracting considerable attention. The British American Oil Co. No. 1 McCarthy, in the NE NW of 31-25S-17W, is making six million cubic feet of gas daily, and spraying 25 barrels of oil daily from the Gorham sand topped at 4535, and drilled to 4545.

Two wells are expected in shortly in the Oklahoma City deep pay.

California

NOTWITHSTANDING an estimated shut in of 67,000 barrels in the southern California fields, the total state output was approximately 770,000 barrels for week ending May 11, as compared with 758,000 barrels for previous week.

Reports from northern fields are slow in coming in, but are not expected to show any substantial addition to the present figures.

Appearances might indicate that the results desired from general orders Nos. 1 and 2 were not obtained. Reductions continue to be offset through the flush oil added by new completions. Santa Fe Springs with nine completions and recompletions for 35,600 barrels had a total production of 170,000 barrels, which is 40,000 barrels more than its allotted production. These wells that are allowed to flow unrestrained for 10 days will continue to hamper curtailment plans.

Umpire van Deinse indicated in general order No. 3, issued May 10 and to be effective May 16, that we will take 7 o'clock a. m., May 4, 1929, as the basic date, from which his records will reflect the apparent production of oil from each lease and parcel of land. From these records the excess production of any field or any operator will be determined and will reflect in the next ensuing order.

Operators whose well production is sufficient only to pay operating expenses are asking that they be allowed to continue to produce the quantity that will pay these expenses, without any reduction. They claim that the additional production resulting from unrestricted operation of such wells would have little effect on the total output of the state.

Wyoming, Montana

U. S. Petroleum company has made a strike in its wildcat well about six and a half miles northeast of Great Falls; no test has been made of the production.

Midwest Refining company is completing the second producing well in the new Frannie field northern Wyoming. Wildcat well on Byron Lake structure, southeast of Frannie, has encountered black oil in the lower Sundance. No test is made of the production.

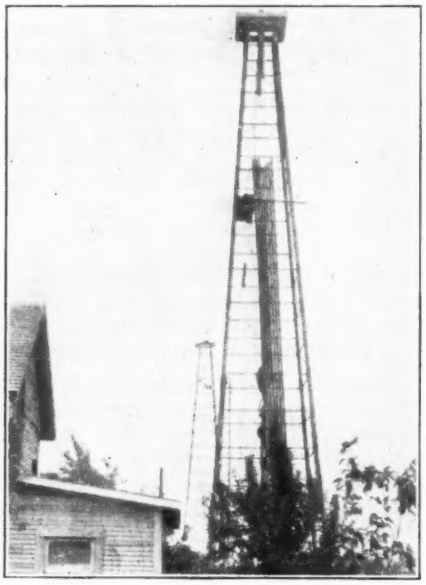
White Eagle Oil & Refining company and the Texas Co. are filling 500,000 barrels of storage with Salt Creek crude as a reserve for their refineries. The crude is government royalty oil and the tankage is that recently taken over from the navy department, on Teapot Dome.

Geological Survey at Casper is asking for bids to plug and abandon wells on the public domain which have not had this work accomplished according to government regulations. Midwest Refining company is now managing all gathering lines in the LaBarge field, southwestern Wyoming, and has abolished the gathering fee of 10c per barrel.

Marland Production company, it is said, will locate six more wells in Lea county, New Mexico, on its extensive acreage there. Marland has drilled several wells in that county, but at present has no active operations there.

27 Active Locations Made Near Asher, Oklahoma's Newest Boom Town

By John Power
N. P. N. STAFF WRITER



Several town lot locations have been made within the city limits of Asher

ASHER, Okla., May 11

ASHER, about 25 miles south of Shawnee, is Oklahoma's newest oil boom town. About a month ago the Simms Oil Co. completed a rank wildcat for 1800 barrels daily just east of Asher, the production coming from an unexpected pay streak in the Viola lime.

Although attracting a certain amount of attention, as any 1800-barrel wildcat is entitled to do, the well did not cause any particular excitement for several days. This apathy on the part of new pool prophesiers was principally due to the producing formation, for the Viola lime's history includes but few commercially profitable wells, be they ever so flashy at their inception.

A few days time, and a foot or so more drilling changed things considerably, however. When deepened, the well steeped its production up above the 3000-barrel per day mark, flowing its production naturally, and making practically the same amount every day. Operators began to sit up and take notice then, and several trades were completed and locations made.

Then the tools were run in the hole and the oil agitated, which brought on some more excitement, the daily production increasing to more than 3600 barrels. Even when the driller quit swinging the tools the well refused to subside to any very great extent, the daily gages hanging evenly around 3530 barrels.

The Viola lime was topped at 3640 feet in the discovery well. Eight and one-quarter-inch casing was set and cemented at 3652, from which point the cable tools took over the job. Shortly after being drilled out of the pipe, the well started making oil, reaching a production of 15 barrels an hour at a total depth of 3684 feet.

When preparations had been made to care for an increase in production, the well was deepened to 3698 feet, the well increasing its production to 80 barrels an hour. Continued deepening, until the well reached a present total depth of 3700 feet, plus agitation, increased the production to its present level.

Short term leases, as well as the terms of some of the acreage trades have speeded up the play, so far all based on the one Viola lime producer. Twenty-seven active locations have been made, the roads leading to Asher carry considerable traffic, and the town is taking on the appearance of a boom. Four locations have been made within the "city limits," although the rush has not reached town lot proportions, the wells so far all being located on leases which cover at least an entire city block.

Maud, the center for the southwestern members of the Seminole group of fields, is the supply base for Asher. Supply houses with branches in Maud are trucking in the material ordered for the rigs at Asher, in spite of the fact that Asher is served by a branch of the Rock Island, which has a spur running south from Shawnee, terminating in the new boom town.

The hesitancy in putting in stocks in Asher is partly a reflection of the attitude of many of the operators, who are skeptical of the possibilities of an important field being found. Good wells are a rarity in the Viola lime. In most instances, such wells as have proven commercial producers did not indicate what other wells in the neighborhood would be like. The story told by the wells now drilling when they reach the same streak as the Simms well is producing from will indicate far more than the performance of the discovery, no matter how good a well that is.

Nowadays, when a well in the general Seminole area is a producer in any formation above the Wilcox sand the first thought of all concerned is, "will it produce in the Wilcox?" Of course there's no telling about the Simms discovery until it is drilled to the Wilcox, but such information as is now available indicates that if there is any Wilcox production in the area, it is close to the new well.

A dry hole has been drilled to the Wilcox a mile east and a quarter south, the dry hole finding the Wilcox at a depth of 3817 feet. More recently, Tidal Oil Co. et al. have completed a Wilcox failure at a total depth of 4289 in the center of SE SE of 31-5-2, about seven miles south and 12 miles west of the Simms well.

In spite of the remoteness of the Tidal well it was expected that it would throw some light on sub-Viola lime conditions and possibilities. The results were disappointing, however, and the Wilcox around the Simms well is still "wildcat territory."

It is more than probable that some of the wells now drilling near the discovery, should they prove failures in the Viola, will be drilled on to the Wilcox, in search of the deeper production. No structural relief is apparent on which the geologists can make predictions for the future.

Drilling conditions in the field are similar to those found in the Seminole field, with the exception that there are not so many of them. The uplift caused by the Arbuckle mountains south of Asher naturally brings the formation a little nearer the surface in the Asher district than in Seminole.

AS IN the Seminole pools, the rotary drilling method is used, down to the top of the Viola lime. At this point, it is probable that most of the drilling wells will set 8¼-inch casing, and cement it. It is expected that the "rope chokers," or cable tool men, will take over at this point, the Viola will be drilled with the cable tools, and, should deeper drilling be carried on, this too will be done with the cable tools.

Gas, furnished for the most part by the Tri-County Gas Co., subsidiary of the Independent Oil & Gas Co., is the fuel for the wells now drilling. The Tri-County has played a

big part throughout the development of the entire Seminole and adjacent fields through furnishing the gas for drilling fuel. A line of the company's running north from the Allen field passes the Asher development on the east.

Water, obtained from the town of Asher for the drilling of the first well, is now obtained from the Canadian River, which drags its burden of sand and mud a little south of the field. Due in part to the poor quality of the water, and in part to the uncertainty of all streams during the summer months, water wells are being drilled as a source of supply. Plenty of water for drilling and lease requirements usually is obtained at depths ranging from 250 to 300 feet.

Although rapidly taking on the appearance of the typical small oil town, Asher is no new settlement. The one principal, or business street runs east and west along a ridge. Continuing eastward along the main thoroughfare the visitor soon finds himself in the heart of the present development. The ridge on which the town is located is part of the series of rolling hills and mounds which form the "foot hills" of the Arbuckle mountains. Scrub timber covers much of the land which is not cultivated.

Were the derricks on the outskirts of the town invisible, any Oklahoman who suddenly found himself in the Asher of today would know that he was in the vicinity of a recent oil strike. Long, narrow clapboard shacks, bearing such inscriptions as, "Cozy Rooms," "The Full Bucket Cafe," "Dance Hall" and the like are going up almost overnight. Trucks and cars line the center of the street, parking space already being something of a problem. Local color is being spread on a pallette by the makings of the boom town, sparingly at first until a certain amount of future is assured, but with the promise of the real thing should the area contain a major oil field.

81 Refiners Agree to Report Weekly Figures to A.P.I.

NEW YORK, May 13

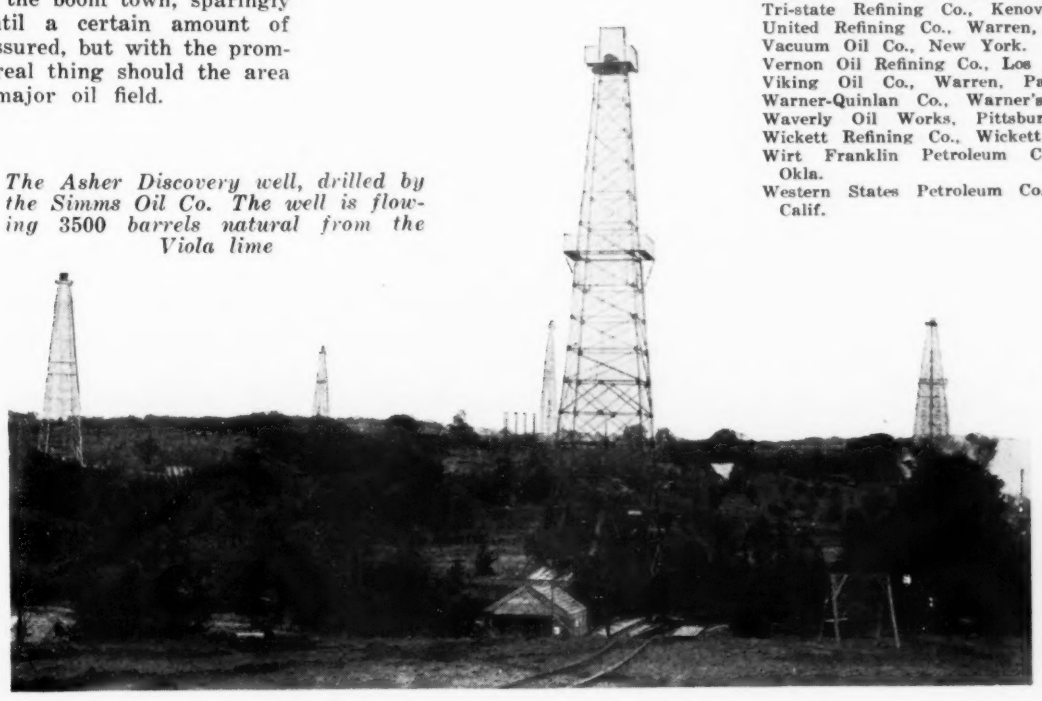
COMPANIES representing 42.8 per cent of the refining capacity of the United States have agreed to cooperate in the compilation and publication weekly by the American Petroleum Institute of refinery statistics. The compilation of such statistics was recommended by a special advisory committee of the Institute's division of statistics.

The figures will cover crude run to stills, gasoline stocks and gas and fuel oil stocks for the various refining divisions of the country as now put out monthly by the U. S. Bureau of Mines.

W. R. Boyd Jr., executive vice president of the Institute, gave out the following list of refining companies that have promised to cooperate in the enterprise:

Aetna Oil Service, Inc., Louisville.
Anderson-Prichard Oil Corp., Oklahoma City.
Ashland Refining Co., Ashland, Ky.
Barber Asphalt Co., New York.
Barnsdall Refining Co., Tulsa.
Bartles-Maguire Oil Co., St. Paul.
Bradford Oil Refining Co., Bradford, Pa.
Canfield Oil Co., Cleveland.
Carnegie Refining Co., Carnegie, Pa.
Chalmette Petroleum Corp., New Orleans.
Cities Service Refining Co., Philadelphia.
Col-Tex Refining Co., Oklahoma City.
Cosden & Co., Big Spring, Tex.
Crew-Levick Co., Philadelphia.
Crystal Oil Works, Oil City, Pa.
Cushing Refining & Gasoline Co., Cushing, Okla.
Dale Oil Refining Co., Wichita Falls, Tex.
Dixie Oil Co., 910 South Michigan avenue, Chicago.
Elk Refining Co., Falling Rock, West Va.
Emlenton Refining Co., Emlenton, Pa.
Empire Oil & Refining Co., Tulsa.
Falls Refining Co., Wichita Falls, Tex.
Franklin Creek Refining Co., Franklin, Pa.
Garber Refining Co., Garber, Okla.
Gilmore Oil Co., Los Angeles.
H. F. Wilcox Oil & Gas Co.
Holly Oil Co., Huntington Beach, Cal.
Homaokla Refining Co., Allen, Okla.
Humble Oil & Refining Co., Houston.
Independent Oil & Gas Co., Tulsa.
Independent Refining Co., Oil City, Pa.
Indian Refining Co., Lawrenceville, Ill.
Johnson Oil Refining Co., Chicago Heights, Ill.
Kendall Refining Co., Bradford, Pa.
Louisville Refining Co., Louisville.
Lubrite Refining Co., St. Louis.
Magnolia Petroleum Co., Dallas.
Marland Refining Co., Ponca City, Okla.
McKean County Refining Co., Bradford, Pa.
Ohio Valley Refining Co., St. Marys, W. Va.
Oil Creek Refining Co., Titusville, Pa.
Pampa Refining Co., Pampa, Tex.
Pan American Petroleum & Transport Co., New York City.
Paragon Refining Co., Toledo, O.
Pennsylvania Refining Co., Karns City, Pa.
Pennzoil Co., Oil City, Pa.
Phillips Petroleum Co., Bartlesville.
Primrose Refining Co., Wichita Falls, Tex.
Pure Oil Co., Chicago.
Rajah Oil & Refining Co., Youngstown, O.
Rock Island Oil & Refining Co., Rock Island, Ill.
San Angelo Refining Co., San Angelo, Tex.
Seaside Oil Co., Summerland, Calif.
Shaffer Oil & Refining Co., Tulsa.
Sinclair Refining Co., New York.
Solar Refining Co., Lima, Ohio.
Standard Oil Co. of California, San Francisco.
Standard Oil Co. of Kansas, Needesha, Kans.
Standard Oil Co. of Kentucky, Louisville.
Standard Oil Co. of New Jersey, 26 Broadway, New York.
Standard Oil Co. of New York, 26 Broadway.
Standard Oil Co. of Ohio, Cleveland.
Star Refining & Producing Co., Fort Worth, Tex.
Starlight Refining Co., Karns City, Pa.
Stellar Refining Co., Newark, O.
Sun Oil Co., Philadelphia.
Sunset Pacific Oil Co., California.
Swan & Finch Refining Co., New York.
Texas Pacific Coal & Oil Co., Fort Worth.
Tide Water Oil Co., New York.
Titusville Oil Works, Titusville, Pa.
Tri-state Refining Co., Kenova, W. Va.
United Refining Co., Warren, Pa.
Vacuum Oil Co., New York.
Vernon Oil Refining Co., Los Angeles.
Viking Oil Co., Warren, Pa.
Warner-Quinlan Co., Warner's, N. J.
Waverly Oil Works, Pittsburgh.
Wickett Refining Co., Wickett, Tex.
Wirt Franklin Petroleum Corp., Ardmore, Okla.
Western States Petroleum Co., Long Beach, Calif.

The Asher Discovery well, drilled by the Simms Oil Co. The well is flowing 3500 barrels natural from the Viola lime



Open-Door Policy by Institute Directors Is Inherent Right of Members

By Warren C. Platt
EDITOR

SOME of the acts, particularly recent ones, of the directors of the American Petroleum Institute, naturally bring up the question if the directors are not drifting away from the original and best plan for conducting the affairs of the Institute.

Are not the directors looking upon themselves as an operating body, such as are the directors of a private corporation? Are they not drifting into the thought, perhaps unconsciously, that they have the power to bind to whatever proposition they may think best, not only the Institute and all its members, but even the whole oil industry, and without consulting the members?

In short are not these directors, and more especially the officers of the larger companies, acting as autocrats of the industry and overlooking entirely the representative character that the Institute is supposed to have?

No one probably will more quickly deny a plan to set up an autocracy over the oil industry than these directors themselves, yet we submit that a fair study of the acts of these leaders recently and some time back, would indicate a seeming forgetfulness on their part of the members of the Institute and the rest of the industry.

Some of the difficulties that the directors have gotten themselves into would indicate that lack of thought for fellow members. Had the latter's existence been kept in mind, it is entirely possible, in fact most probable, that the directors would have—at least could have—benefited from the views of the membership to the extent of keeping out of several embarrassing situations.

The strength of a voluntary association of this character lies in the confidence its members and all others have in it, and such confidence comes from the accuracy and impartiality of the association in expressing the views of all of its members.

While the Institute's directors are given broad powers by the by-laws so that what they have done in the way of representing its members is undoubtedly within their legal powers as directors, nevertheless the primary idea of the Institute, as the writer recalls the many statements to him and others made by the late A. C. Bedford, who practically was the father of the Institute, and by R. L. Welch, who reared it from birth as its first secretary and general counsel,—the primary idea was to improve the thinking of the oil industry and to be a means of accurately reflecting that thinking. The Institute is, or should be, a forum for open discussion and consideration in such ways as are most practical of the problems of the industry. From such discussions come knowledge, education and a better industry.

The Institute was planned after the organization of the Chamber of Commerce of the United States, yet it has in a number of instances drifted clear away from that useful body's conservative method of operation. The Chamber carefully adheres to the plan of informing its members of all matters on which it wishes an opinion and then gives every member a chance to express his opinion on those subjects. This opinion the Chamber presents to the public for whatever it may be worth, that is, that so many members approved the idea and so many opposed it. The Chamber carefully refrains from entering into any covenants either between its members or on behalf of its members. These members can do what they wish with the opinions by the majority and minority.

This may appear to be rather a slow and cumbersome way to get along, compared with the speed and definiteness that is possible with private organizations and their boards of directors, but it has so far been found to be the only practical method for large voluntary organizations of this type. If a voluntary association of the ordinary industrial type undertakes to take a definite stand on a highly controversial question it will misrepresent the minority of its members and be in constant argument and always facing the possibility of a minority seceding.

The American Petroleum Institute has done much wonderful work, in a way fair to every member and this work has been so valuable because in doing it the Institute recognized the rights of every single member.

BUT on some other matters that have been close to the hearts of some of the bigger executives, these men have let their personal bias interfere with the proper handling of those subjects before the Institute. Instead of trying to help the industry, through giving it all the facts and opinions possible, to arrive at an intelligent understanding of these subjects, these leaders have repressed discussions, and have held back information from the industry because it did not accord with their own ideas. Instead these men should have kept hands off and let the ideas develop freely and naturally as they have in the Institute's great work on technical matters.

One of the first illustrations of this autocratic spirit was some four years ago when Henry L. Doherty first brought up the subject of better conservation of our petroleum resources and urged the industry to hurry its study of the matter lest we have interference of an unsatisfactory sort from government. Mr. Doherty finally presented to the Institute directors a plan of his own for handling conservation, which called for government legislation.

At once most of the directors violently opposed the plan and also did everything in their power to prevent

any information concerning it leaking out of their secret meetings, not only to the public but to the industry and other members of the Institute. The directors did everything in their power to stifle all discussion of the subject by the industry, the futility and foolishness of which has since become apparent especially to those directors who since have changed their views and now are for legislation.

This conduct of the directors was absolutely contrary to all sense of fairness to the industry and was a most flagrant disregard of the rights of the members of the Institute. It was the most striking exhibition of autocracy in association matters the writer has ever heard of.

THE spirit of autocracy seems to dominate whenever this subject of conservation comes up. Right now these same men, as directors of the Institute, are doing the same thing they did several years ago, conducting the consideration of conservation as if it was a matter the solution of which had been delegated to them for all time by the rest of the industry. On most other subjects these same men take a broad, open minded position and consider the rights of the other members of the Institute. But not so on conservation.

Some lamentable things have happened recently as the result of this policy of autocratic secrecy. In December, at St. Louis, at a highly confidential session of the directors, with a few hand picked guests, the question of whether the Institute—as represented by these few members of it—should approve legislation or not was hotly debated all one evening. Things were said in the heat of battle there that had better been left unsaid. Few opinions were changed by the argument and the minority was more convinced than ever that it was right.

We are not at the present moment commenting on the subject discussed, but only on the methods of its consideration. These same directors have not sought the opinion of the other members of the institute, as to whether they want more legislation for the industry or not. In fact these directors have privately actually refused to submit the question to the membership, a most undemocratic position.

Then take the latest development on legislation, the so-called "compact by states" as proposed by the Federal Oil Conservation Board. The Institute has men running around to the governors of various oil states, presumably talking up the compact idea. To what these men are directly or indirectly committing the Institute, no one knows except the directors, and perhaps only some of them. The question may well have been raised does the industry want the subject stirred up with all these governors? Might the board not have asked the members about it first?

Then, a month ago, the board found itself in a very humiliating position in relation to its much talked of "plan for operation of the industry" and the Department of Justice. The board submitted this plan, which it drew up in secret, save for the hand picked guests, for the approval of the government. The Department of Justice, following a policy that it has adhered to for a century and which it has many times heralded to the world, refused to approve the plan and went further and warned these oil leaders that they might be suspected of planning a conspiracy in restraint of trade.

This was another illustration of that autocratic thinking that seems to be a part of these leaders' consideration of conservation. The famous plan was not discussed in public, but in private by these few men. It was never made public in whole; the other members were never consulted in regard to it. Had they been consulted the discussion would undoubtedly have brought forth the warning from many quarters that, regardless of the merit or demerit of the plan, asking the government to approve it was a serious mistake.

The utter ridiculousness of this method of handling this plan evidently never appealed to these leaders—that here is a plan drawn up in secret, by a few men, to be approved by government officers, yet a plan drawn up as representing the whole public and by which the rest of the oil industry was to be regulated whether it knew anything about it or not, or whether it agreed or not.

Then, again, these leaders caused a code of marketing standards to be drawn up in secret to be discussed and approved by the directors in secret and then to be presented to an unexpectedly called meeting of a few of the members of the Institute, with the statement that they take it without further consideration and without change, or be branded as traitors to the cause of the "oil industry."

Then a few weeks later these same standards were submitted to the Federal Trade Commission as "approved by the Institute and the whole industry." Yet neither the membership of the Institute nor the rest of the industry had been consulted, as it should have been, such consultation as there was being a last minute effort to inform the industry and being due to the vigorous criticisms of the method followed by the directors in developing the subject.

Now all this is not done by these leaders with the maliciousness that appears on a surface review of the situation. We know that they do not deliberately intend to ride rough shod over everybody else in the industry. Their errors come from ignorance and the critical situation on some questions before the industry which causes them to lose a fair point of view.

THESE oil leaders who are thus trying to hold the reins on the oil industry overlook one fundamental fact and that is, while an industry may be measured in tons or barrels and gallons, it consists so far as association activity is concerned, of human beings who act as individuals. Each human being is just as important in an industrial association as he is in the United States. Our form of government gives each man just one vote whether he has $5,000,000 or 5 cents.

The by-laws of the Institute give each member just one vote, whether he is the head of a company representing ten per cent of the oil industry or owns a single barrel a day oil well or a ten-gallon gasoline pump beside the curb. While it is necessary to have the big companies actively represented in an industrial organization it also is just as necessary to have the small man.

The Institute should have every man in the oil industry as a member. That is far from the case now. Perhaps one reason is this autocratic policy which has crept into the consideration of some of the most important problems before every oil man.

The Institute can best serve the industry if it opens all doors to its members, if it consults with its members freely and frankly and if it at all times strives earnestly and intelligently accurately to reflect the thinking of its members.

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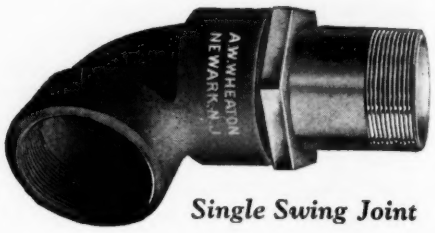

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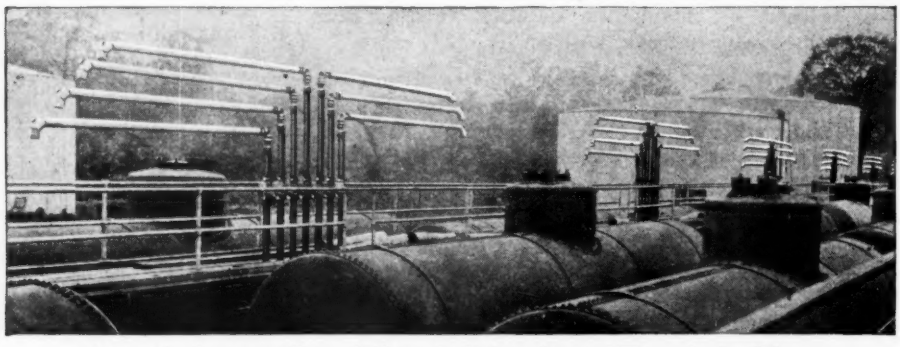

This view also shows an installation of Wheaton Double Swing Joints and Wheaton Loading Valves

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Refined Oil Exports to Europe To Increase Less Rapidly

TULSA, May 11

THE American oil industry need not expect any very tremendous increase in volume in exports to continental Europe in the opinion of P. M. Miskell, Gen. Mgr. Empire Refineries, Inc., who has just returned to Tulsa after several months abroad.

In fact, in the opinion of Mr. Miskell, there will be only nominal increases in Europe in the next few years, after which time it is quite probable that our exports to those countries of refining oils will decline.

Tendency of the European countries is to force the importation of crude oil and the refining of it within their borders for military defense. There are many refinery projects all small ones, being planned at the present time for European countries. Owners of American cracking processes are busy figuring on many jobs.

When the Russian situation is straightened up, if it ever is, there will undoubtedly—according to the information Mr. Miskell got—be a great deal of Russian crude refined in Europe, to the exclusion of crude from America and South America.

"But the controlling factor in the limiting of consumption of petroleum products in Europe," said Mr. Miskell, "is the extremely limited buying power of the people. We have no idea in this country of the conditions existing in Europe. There are only about 200,000 automobiles in Spain, for illustration, about one-half the number there are in Oklahoma. Only a small percentage of the people in Spain have wealth, the rest are in real poverty.

"In France taxes are high, especially on automobiles and gasoline, incomes are small and thrift has been so ingrained in the French people for centuries that they will never take a chance and speculate on the prospects of possible future income as we will in this country. There are men in France worth say $100,000.00 who have not got an automobile, partly because they do not want to disclose that wealth lest it be taxed; partly because they have not been trained to spend their money; whereas, men of that relatively small wealth in this country would have at least one car, even two or maybe three.

"England is still struggling with the unemployment problem and high taxes. But England being small, with narrow roads, has a severe traffic problem right now with what cars it now has. I took a 7-hour drive out of London and outside of it one Sunday and instructed the chauffeur to cover as much ground as he could and to make as much speed as he could and all we could do in that time was 110 miles. We were fighting traffic continually.

"Germany, of course, is hard at work, but it has a lot of money to pay out of whatever income it can get. Italy is going to work but it too has no surplus funds in the hands of its people.

"A very conservative policy on the part of American oil companies in regard to its plan for export to Europe is the only one that we hold."

S. P. COBLENTZ, president and general manager of the Motor Fuel Products Co., calls our attention to the fact that his company's refinery at Laredo, Tex., was omitted from the list of West Texas plants published on page 40-d of the May 1 issue of NATIONAL PETROLEUM NEWS. Mr. Coblentz says his plant has a crude capacity of 1700 barrels a day and has one Jenkins cracking unit. The Motor Fuel Products Co., he states, is a subsidiary of the United Gas Co.

Institute Seeks $700,000 Yearly For Government Research

WASHINGTON

THE American Petroleum Institute has asked that congress appropriate $700,000 a year to be expended through the Bureau of Mines, "for needed fundamental petroleum research work now being, and which should be, carried on by that bureau in the producing and refining centers of the United States and that the personnel and amount now devoted to such work are entirely inadequate."

Edward E. Gann, brother-in-law of Vice President Curtis, appeared recently before the senate committee on mines and mining as a representative of H. V. Foster, Oklahoma producer, who is chairman of the Institute's special committee to investigate and report on the need of research work in the oil industry.

Mr. Gann read a letter from Mr. Foster to the committee, urgently recommending the appropriation named to carry out a broad program of research in the producing, refining and natural gasoline branches of the industry. In the report of the Institute committee, which was filed with the senate committee, a number of subjects for study were outlined and a number of specific projects suggested for research.

In the producing branch, the following subjects were set forth as requiring further study and research; increasing the recovery from oil sands; air and gas lift for the production of oil; study of gas-oil ratios; engineering field studies; paraffin in oil wells; geophysical prospecting; use of vacuum; evaporation losses; corrosion problems; disposal of oil field waters; salvages in the petroleum industry; petroleum safety; natural gas measurement and pipe line flow; open flow capacities of gas wells.

Under refinery problems the following were named: fractionations and chemical treatment of light petroleum distillates; study of sulfur compounds; study of lubricants, wax and wax distillates; crude oil studies; utilization of residue and other "dry" gases.

These are urged as subjects for immediate work. Future research problems of the industry are cataloged as follows in the Institute committee's report; exploration; drilling; production and operation; increasing the recovery of oil from sands; transportation and storage; production of natural gas; transmission of natural gas; utilization of natural gas; refining; petroleum chemistry; safety in the petroleum industry.

Infringement Hearing in June

CLEVELAND, May 13.—Hearing of the legal phases of the suit of the Ethyl Gasoline Corp. against R. Prescott Beardslee of Cleveland who last year marketed a gasoline dye under the business name of Ethyl Color & Chemical Co., will be held early in June in the United States district court in Cleveland. Infringement is charged by the Ethyl Gasoline Corp.

FORT WORTH, Tex., May 11.—The eastern sales division of the Texas Pacific Coal & Oil Co. has been moved from 24 Broad street, New York City, to 519 Fifth avenue, New York. Ward F. Dayton is in charge of this division.

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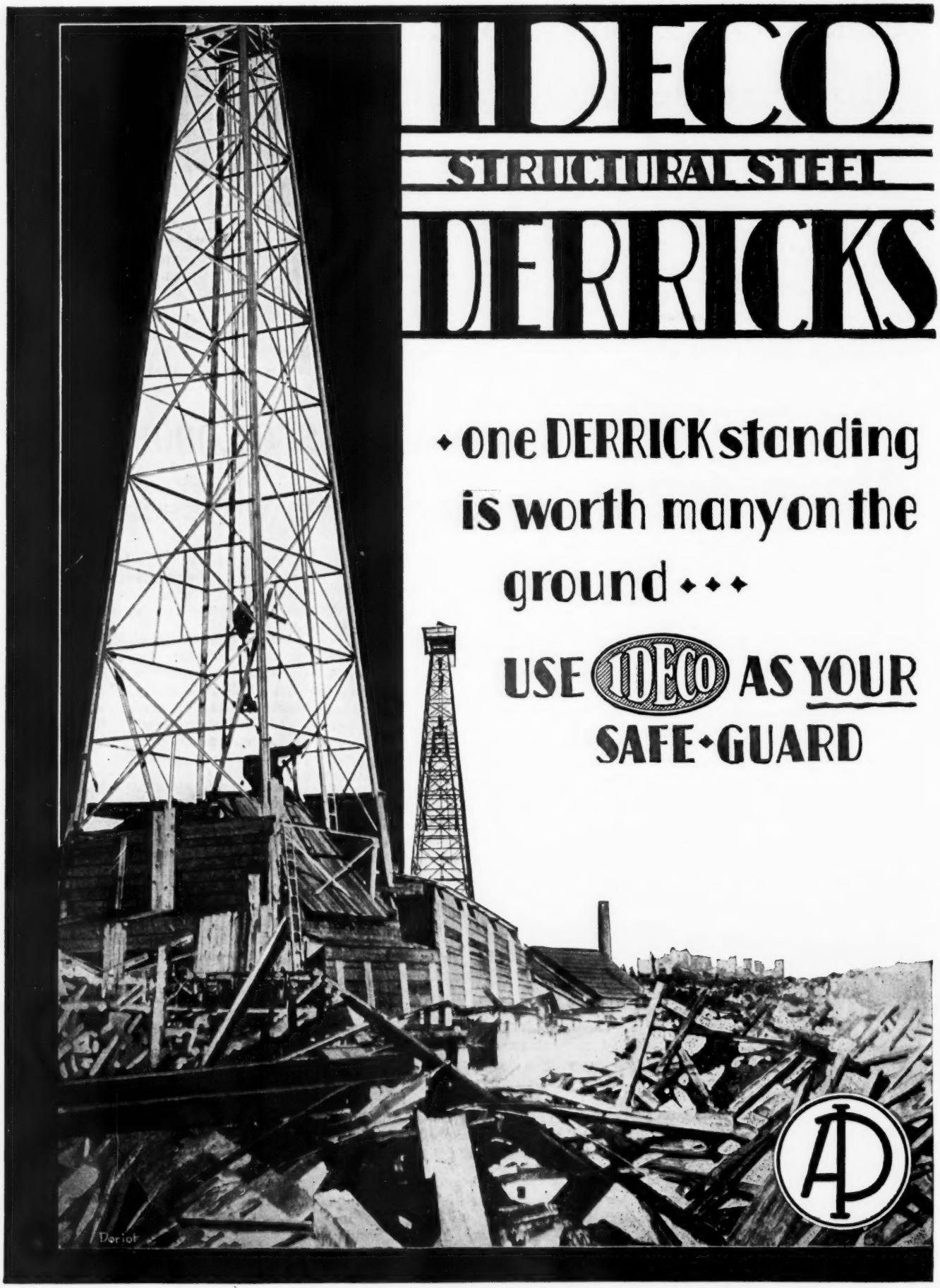

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Export Representation—74 Trinity Place, New York City; Columbus, Ohio; Houston, Texas; Los Angeles, Calif.

GOVERNOR HOLLOWAY, of Oklahoma, after receiving in conference Mark L. Requa, of California, announced that the proposed "interstate compact" on oil conservation has his moral support. He will appoint representatives to attend whatever meetings may be held on the subject.

It is getting to be quite difficult to cipher out just who is engineering the treaty. Dr. Wilbur, secretary of the interior, appeared to have thought it up and Dr. George Otis Smith, director of the U. S. Geological Survey, went to California to interview the governor there, working his way east and taking in Texas and Oklahoma. Mr. Requa was in the east and made his first stop in Oklahoma.

Their paths should have intersected about Nogales, Ariz., according to careful computations made in this office, allowing for wind and weather and the fact that the eastbound train travels with the rotational direction of the earth.

Mr. Requa makes it plain that he travels without commission, that he is interested solely in the conservation of natural resources. Both the unofficial and the official emissary doubtless made good impressions on the governors.

We have had the pleasure of knowing Dr. Smith for some years—and a real pleasure it has been. He has directed the Survey through many years of constructive public service and economic achievement of high value has been recorded through these years. We have met Mr. Requa only once or twice. He has many admirers and even those who are in disagreement with him on the present attack on the conservation problem admire his sincerity of purpose and his integrity of thought.

P. S. It has been called to our attention that a recent bit of research proves that a man in an upper berth travels 16 inches farther in a night's journey than does one in a lower. This is because of the curvature of the earth's surface. Not knowing whether either of the plenipotentiaries took an upper, we shall have to let stand our original deduction as to where they would meet.

* * *

And, speaking of interstate compacts, one is needed between Kansas and Oklahoma. The Jayhawker state gendarmes have been arresting drivers of commercial vehicles licensed in Oklahoma but not in Kansas. The Empire Oil & Refining Co. was one of the sufferers.

Kansas has a law providing for reciprocal recognition of license tags issued in neighbor states, but Oklahoma has not and Kansas claims that Oklahoma fired the first shot. It is all very silly, as the commercial vehicles that are subjected to the penalty cross the state line repeatedly in the daily conduct of business. Anyway, a treaty is needed.

* * *

B. A. LaSelle, who has wildcatted with some success in Pontotoc county, Okla., for years, has sold his holdings near Bebee, in Twp. 5-5E, to Benedum & Trees. About 1000 acres of leases and 300 barrels daily production changed hands.

* * *

The name of the corporation headed by J. S. Cosden is being changed from J. S. Cosden & Co., Inc., to Cosden Oil Co. Mr. Cosden, who withdrew from the large company which he built and which is now the Mid-Continent Petroleum Corp., re-engaged in the oil business three years ago, with West Texas as his theater. Gradually he is adding to his holdings, having substantial production in Oklahoma as well as Texas, and a West Texas refinery. The Cosden name, it appears, will again be a potent one in the industry.

Keith Clevenger

* * *

Construction of Oklahoma City's 25-story hotel, to be operated by the Biltmore chain, will be started June 1. It will be financed by Oklahoma City and New York people, with C. F. Colcord, an early-day Mid-Continent oil producer, heading the construction company. Its cost is to be about three and a half million dollars.

* * *

The American Gas Association went to Bartlesville, Okla., for its new director of publicity and advertising, Keith Clevenger. He was director of information service for the Empire Gas & Fuel Co. and associated companies. He served for several years as public relations representative for the same interests. He brings to his new work 10 years of public utility experience. Mr. Clevenger was prominent in Kansas journalism before entering the Cities Service work. He will henceforth live in New York.

* * *

Death of Buck Garrett, at Ardmore, was not national news but to the Oklahomans who remember the opening of the state to civilization, the event was full of meaning. Garrett was an early-day peace officer, serving 20 years by federal appointment and after that as chief of police of Ardmore and as sheriff of Carter county. He was one of the few remaining links between the Oklahoma of today and the rough, often dangerous, territorial days. He was truly a "peace" officer, always "getting his man" but doing it without bloodshed.

* * *

W. N. Robinson, veteran hotel man, issued a set of rules to be observed in the lobby of the Hotel Tulsa, when the remodeled and enlarged hostelry recently had its formal opening. His rules pertained to drilling and leasing activity by those who operate in the lobby. Samples:

"No well shall be drilled before

6 a.m. or after 3 p.m. Operations at that time may disturb some paying guest.

"No wells shall be drilled in a tone of voice audible outside the three mile limit.

"No dry well will be tolerated in this lobby. All wells brought in here must be of the 1000-barrel class or better. There is plenty of room in the oil fields for dry holes.

"No undeveloped 40-acre lease six miles or more from production shall be sold for more than $1,000,000. Ananias has held the championship belt for many years. Why not let him rest in peace."

* * *

Ten Years Ago

(From National Petroleum News, May 14, 1919)

Standard Oil Co. of Indiana relieves Mid-Continent fuel oil congestion, purchasing at 90 cents per barrel and converting part of its Whiting works from coal to oil burning.

Fred W. Lehmann, Des Moines attorney, appointed secretary of Western Petroleum Refiners Association, succeeding R. L. Welch, who resigned to become secretary of American Petroleum Institute.

Ohio Cities Gas Co. (now Pure Oil Co.) breaks ground for refinery near Newark, O.

Baltic Refining Co., Forth Worth, changes name to Inland Refining Co. E. R. Perry, general manager of Cosden & Co., is secretary-treasurer of the Inland.

Ranger and Burkburnett fields reach new peaks of production. Oklahoma fields quiet.

House Committee Action Throws Tariff Fight to Senate

WASHINGTON, May 14

REPUBLICAN members of the House of Representatives ways and means committee having reported the tariff bill leaving the status of crude petroleum unchanged, representatives of that part of the industry that believes crude should be transferred from the free to the dutiable list began casting about for a method of taking the question of the transfer, to the House, if possible, and to the Senate at any rate.

Owing to the confusion among the majority party members of the House, caused by their disagreement as to what the committee should have done, the oil men could not make definite plans immediately after the bill was reported. E. B. Howard, former member of the House from Oklahoma, and C. S. Thomas, former senator from Colorado were in general charge of plans to bring pressure on the members of the two houses.

Representative Hastings of Oklahoma was in charge of work other than that having to do with persuasion of Republican members of the ways and means committee. Kansas and Oklahoma royalty owners are represented in the fight by Guy Woodward.

It seemed probable that the making of definite plans might be begun after a conference of Republican House members today. That conference was held with a view to determining whether the House leaders should leave the rules under which the tariff bill was to be considered such as to enable a member in favor of putting crude on the dutiable list to make a motion to that effect. Usually amendments to a tariff bill are offered only in accordance with a carefully laid plan. Motions other than those in conformity with the plan are ruled out of order. At the time this was written crude petroleum motions, no matter what their form, were in the category of those to be ruled out of order.

On account of the character of the House rules the probability is that whatever fight is to be made for a duty on crude petroleum will have to be made in the Senate. The rules of that body are such that a bill is subject to any motion a senator may desire to make.

The talk, immediately after the ways and means committee reported the tariff bill with crude still on the free list, was that the fight would have to be made in the Senate and that a motion to transfer it to the dutiable list carrying a duty of 50 cents per barrel would be made when the bill reached the stage of amendments.

However, in the event the bill creates so much dissatisfaction among Republican House members as to force the leaders of that body to go to the consideration of the measure under the ordinary rules of parliamentary procedure, the fight for oil can be made in the House. There is small chance of that. The leaders, if and when they faced a situation of that sort would agree to enough changes in the bill to bring to its support members enough to close the doors to an amendment to put crude on the dutiable list. That is, to say, the ways and means committee would not run the risk of having its work twisted out of shape in many directions by refusing to make a few changes desired by any considerable number of their own partisans. The objectors would then be taken into the fold, given enough to satisfy them and thereby make them "regular" in favor of shutting out amendments of other minorities.

* * *

TULSA, May 11.—Faced by the necessity of moving quickly if their case is to be given proper consideration in the present Congress, oil tariff advocates in the Mid-Continent are keeping up their work with increasing tempo. That a good showing will be made when hearings are held in Washington is indicated by the substantial number of independent operators who are openly engaged in the campaign.

The first hearing probably will be by the Senate finance committee, on which Oklahoma has a member, Sen. J. Elmer Thomas. The other Oklahoma senator, William B. Pine, is supporting the tariff campaign and the Oklahoma delegation in the lower house is reported to be solidly in favor of an import duty which, supporters believe, will keep out much of the large quantity of foreign oil now entering this country in competition with domestic petroleum.

There being no necessity for making a case before the Oklahoma delegation, work is being done in other states. At a recent meeting in Wichita, temporary organization was set up with Marvin Lee, geologist and producer, as chairman. Mr. Lee and T. C. Johnson, Henry Rosenthal, Ralph Pryor and A. D. Fitzwilliams, all independent producers, constitute the committee appointed to convey the sentiment of the meeting to the Kansas senators and representatives.

Some work has been done in Louisiana and Texas, chiefly through the branches of the Mid-Continent Royalty Owners Association. It is this association and a number of independent producers in Oklahoma and Kansas that have carried the burden of the fight so far. They work together, but each maintains separate organization. C. J. Wrightsman, head of the corporation which bears his name, is general chairman of the independent producers' informal organization.

Former Rep. E. B. Howard, of Tulsa, is in Washington to remain until the campaign terminates one way or another. He was employed by the Oklahoma producers and royalty owners, who asked for financial contributions to pay for the work. Guy Woodward, secretary and counsel of the royalty association, also has been in Washington for several days.

It is the intention of the tariff advocates to ask for a duty on both crude petroleum and its products. They say they have no fixed amount in mind, but are preparing to put into the records of congressional committees the figures on relative costs of producing and transporting Mid-Continent oil and foreign oil. Such figures will also show the difference in taxes.

Halliburton did to Oil Well Cementing what Gustavus Swift did to packing, James J. Hill to railroading and John D. Hertz to taxicabbing—raised it to new levels of efficiency, introduced into it new standards of service, and brought to it new ideas of what can be done with resourcefulness, properly applied.

HALLIBURTON OIL WELL CEMENTING CO.
DUNCAN, OKLAHOMA

Test of Oklahoma-Kansas Line Well Shows Valuable Find Is Made

By John Power
N. P. N. STAFF WRITER

TULSA, May 11

THE opening to production of the Gypsy Oil Co. No. 1 Williams, the Wilcox sand wildcat in the NW SE SW of 16-35S-3W, just over the state line in Sumner county, Kansas, proved to be the most interesting news from the fields of the Oklahoma-Kansas territory. Although drilling activities in other likely areas of the two states continued, no new wells of real significance were completed. With the lifting of proration in Oklahoma on May 15, all areas regarded as capable of new or increased production are being closely watched.

The Gypsy strike, which indicated itself an excellent well several weeks ago, has been shut down since that time awaiting the necessary arrangements to care for the production. The well, southwest a few miles of the town of Caldwell, topped the Wilcox at 4768, and at 4782 looked good for at least 1000 barrels daily.

The first 24 hours after being opened up the well made 1015 barrels of 44 gravity oil, the hourly gages for the first six hours being as follows:

First hour 65 barrels.
Second hour 46 barrels.
Third hour 40 barrels.
Fourth hour 30 barrels.
Fifth hour 55 barrels.
Sixth hour 50 barrels.

When deepened to 4784 the production increased to more than 80 barrels an hour, a figure which the well has maintained for the past two days. Kanotex Refining Co. is taking the oil, handling it through a line to Caldwell, at which point the company has installed a loading rack.

The two other wells of principal interest during the week were also in Kansas. Of these, one is a rank wildcat in Edwards county, which reached its showing last week, and the other is a wildcat about 10 miles of the Valley Center pool of Sedgwick county.

The Edwards county well is the British American Oil Co. et al. No. 1 McCarthy, in the NE NW of 31-25S-17W, west and south of Kinsley. The Gorham sand was topped at 4535 feet, the first five feet drilled showing but little. Between 4540 and 4545 the well started gassing and spraying oil to the extent of six million cubic feet of gas per day and some 25 barrels of oil. A liner has been set, and a control head placed, so that it is probable that by the time this appears in print the well will have been drilled in.

Several large blocks of acreage are held around the well, with the Wilcox Oil & Gas Co.-Amerada Petroleum Corp. interests having some 25,000 acres immediately north and west of the test. M. M. Valerius et al. are also interested in large holdings near the well.

The Gorham sand, from which the production, if any, will come is a chat conglomerate lying between the Pennsylvanian and the Ordovician. In many instances the presence of the Gorham is indicative of the absence of the Mississippian section. Although the formation has been frequently found in what was regarded as a favorable structural position the lack of porosity has prevented it from carrying oil. The principal production now coming from this pay is in the Gorham pool, in Russell county, Kansas. Although not spectacular, the wells hold up in a satisfactory manner.

WESTERN Kansas is getting a strong wildcat play at the present time. So far, the district's two bets for production are the Oswald lime and the Gorham sand. The Oswald, which occurs in the Pennsylvanian, is a sandy lime, part of the Kansas City-Lansing series. Its lack of porosity has also prevented the Oswald from producing in several instances when all the other circumstances appeared most favorable.

The Shell Petroleum Corp.-Dickey et al. No. 1 Robbins, in the NW SW of 21-28S-1E, two weeks ago appeared good for some 300 barrels daily flowing and swabbing. The well was deepened during the week to 3100 feet, and increased its production to about 1300 barrels daily. Top of the pay, which is the chat found on top of the Mississippi lime, is 3080 feet. Dry holes in both the chat and Simpson formations separate the well from the Valley Center pool north of Wichita.

It is expected that before long the Oklahoma City area will begin to show its worth as an oil field. So far, the discovery well of the Indian Territory Illuminating Oil Co.-Foster Petroleum Corp. in the center of the SE SE of 24-11N-3W has had the oil production to itself.

Two wells are drilling at about 6000 feet, but 400 feet from the pay, and so located as to give some possible indication of the productive trend of the pool. They are the Sinclair Oil & Gas Co. No. 1 Stamper, in the NE SW NW of 30-11N-2W, about half a mile southwest of the discovery, and the Mid-Kansas Oil & Gas Co., No. 1 Fortson, in the center of the SW NE of 24-11N-3W, a mile west of the discovery.

Should these wells both produce it is expected that they will stimulate interest in the field, which has lagged of late due to the failure of the upper formations to produce anything but gas.

The discovery well has suffered another small slump in production, dropping to 2877 barrels, with 463 barrels of water. There are now five gas wells in the field, with a combined output of 287 million cubic feet of gas per day. All but one of the five are in the Layton sand, the other being a Tonkawa sand gasser.

Under the proration order, which runs until May 15, some 15 or more drilling wells are shut down on top of the sand in the Seminole district. This shut down, lasting for 12 days was exacted from the drilling wells as their part of the proration. The majority of them are in the Mission and Maud pools. When completed during the coming week or ten days, they are expected to swell the area's production to some extent, as most of them are on close in or inside locations.

THE Asher area of Hughes county, around the Simms Oil Co. Viola lime wildcat is perhaps the most active drilling spot of the district. Close on its heels comes the Gilcrease-Cromwell sand play going on in the south end of the Little River pool. Although new wells have been completed there recently, quite a few are being drilled. It is estimated that this spot may have 25,000 barrels of Cromwell sand oil before long.

The Texas Panhandle reported several better than usual completions during the week. None opened up any new territory. In Gray county, The Texas Co. No. 5 Bowers, in Sec.

9, Blk. B-2, H. & G.N. Survey started off at the rate of 2500 barrels daily from the pay at 2896-2900. The well is about three locations north of the big producer completed some time ago by the Operators Oil Co.

In the same county the Phillips Petroleum Co. No. 1 Palmer, in section 31, Blk. B-2, H. & G.N. Survey is flowing some 10 barrels hourly from the same pay as The Texas Co. well, found in this instance at 2800-2806.

In Moore county, where the activity around the Skelly Oil Co. Armstrong ranch property is the principal play at present, the Skelly Oil Co. No. 7 Armstrong is swabbing some 800 barrels daily from the pay at 3156-59. The well is an east offset to production.

Notes on the Week

The Blankenship Petroleum Co. No. 1 Tuttle, in the SW NW of 1-27S-1E, on the northeast edge of the Valley Center pool, Sedgwick county, Kans., topped at pay at 2996 feet, filling up 1000 feet with oil in three hours. The hole is reported to be caving badly, and a string of 6-inch pipe is being run. This pay is probably a chat streak on or near the top of the big lime.

* * *

A Cromwell sand play is getting started in Okfuskee county, in Twp. 12N-10E. So far most of the wells in this old pool which have been deepened to the Cromwell are coming in for gassers. The Minnehoma Oil Co. No. 2 Fixico, in the SW SE of 29-12-10 is making 27 million cubic feet of gas per day from the Cromwell at 3090-3123 feet.

* * *

Another Layton sand failure was reported from the Oklahoma City pool during the week. Indian Territory Illuminating Oil Co.-Foster Petroleum Corp. and the Cromwell Oil & Gas Co. No. 1 B. Johnson, in the NE NE NW of 25-11N-3W had a hole full of salt water at 5152.

* * *

A wildcat drilled by the Barnsdall Oil Co. in the CSW of 35-18S-21W, on the extreme eastern edge of Ness county, caused some comment for a while, but the appearance of water took much of the edge off the possibilities of the well, which is now estimated as good for possibly 100 barrels daily in the Gorham sand. Pay was topped at 4174-82.

Sinclair Deliveries

TULSA, May 11.—Sinclair Crude Oil Purchasing Co.'s deliveries of oil in April totaled 3,095,208 barrels, or 103,173 barrels daily. In March the total was 3,207,416 barrels, or 103,142 barrels daily. The deliveries thus were evenly balanced over a 60-day period.

Architect's drawing of the 28-story building the Shell Oil Co. will erect in San Francisco

Shell Will Build New Home in Frisco

SAN FRANCISCO, May 11.—A building that will be one of three of San Francisco's tallest will soon be built by the Shell Oil Co. It will be 380 feet high and have 28 stories.

G. Legh-Jones, president, says that it will cost $3,000,000 and will be one of the greatest of Shell buildings throughout the world.

It will be an adaptation of Gothic style of architecture. In it will be the Pacific Coast headquarters of the exploration, production, refining and marketing activities of the Shell Oil Co., and the research and development work of the newly-organized Shell Development Co. and Shell Chemical Co.

The new building will be at the corner of Bush and Battery streets.

The building will be completed in May, 1930.

Magnolia Pipe Line Runs for April

HOUSTON, May 9.—Magnolia Petroleum Company, pipeline department, announces from Dallas headquarters the following crude oil runs for April, which are shown in comparison with March.

	March	April
Hewitt-Graham	144,752.17	146,748.06
Healdton	74,124.43	220,321.66
Cushing	109,397.33	106,006.46
Yale	42,346.63	43,853.42
Augusta	35,816.21	34,942.27
Burbank	79.08	.....
Wewoka	923,926.44	984,662.78
Seminole	61,916.50	59,164.55
Total Okla.-Kans.	1,392,358.79	1,595,699.20
Archer	23,687.71	22,596.46
Burkburnett	61,272.55	65,318.17
Comanche	16,257.78	15,503.74
Electra	90,095.62	90,733.51
Corsicana—Heavy	9,364.74	9,108.37
Corsicana—Light	12,415.08	11,414.22
Henrietta	2,479.59	1,641.78
Iatan	18,524.69	18,813.90
Luling	302,996.22	304,635.32
Lytton Springs	35,201.23	33,997.30
Mexia-Wortham	21,014.42	20,766.55
Mirando	149,158.27	144,810.63
Olden	9,212.06	9,088.72
Panhandle	82,162.03	82,890.92
Panola	916.67	1,709.29
Stephens	9,098.16	8,752.09
Thrall	1,041.39	1,044.25
Crane-Upton	133,192.23	113,988.22
Glasscock	95,713.89	75,214.45
Winkler	123,967.31	103,897.49
Shelby County	311.24	.....
Total Texas	1,198,082.88	1,135,925.38
Haynesville	5,775.07	2,859.35
Bull Bayou	40,778.78	41,509.65
Cotton Valley	24,707.82	18,455.76
Pine Island	29,279.83	31,423.91
Hackberry	89,165.73	51,305.64
Total Louisiana	189,707.23	145,554.31
El Dorado, Light	11,360.72	10,751.87
East El Dorado	5,117.10	3,607.22
Smackover	74,124.43	72,206.87
Rainbow	89,717.62	83,166.14
Total, Arkansas	180,319.87	169,732.10
Grand Total	2,960,468.77	3,046,910.99

OKLAHOMA-KANSAS

Report for April		Daily Avg.
Runs	2,095,764.00	69,859.00
Shipments	2,216,023.00	73,867.00
Total Stock	9,855,607.00	.....

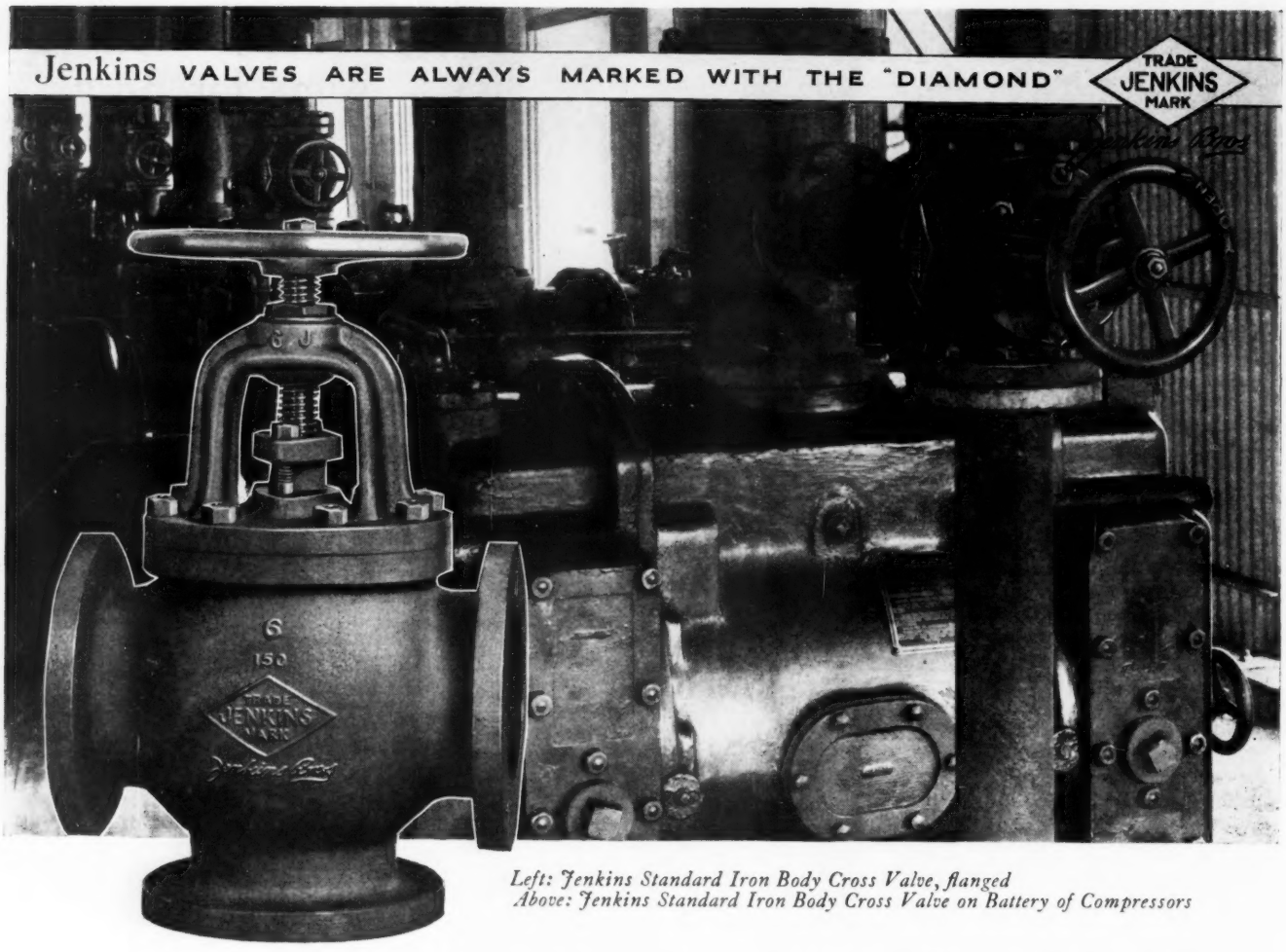
TEXAS

Wichita, Wilbarger, Archer		
Runs	178,964.00	5,965.00
Shipments	174,012.00	5,800.00
Petrolia		
Runs	1,642.00	55.00
Shipments	1,642.00	55.00
Eastland, Stephens		
Runs	33,345.00	1,111.00
Shipments	.....	.....

TOTAL STOCK.....275,735.00—North Central Texas Field

ALTON, ILL., May 11.—L. M. Albright, advertising manager of the Illinois Glass Co. here, now the Owens-Illinois Glass Co., has resigned in order to enter business for himself at Baltimore. He will leave the company on June 1.

NEW YORK, May 11.—Frederick G. Clapp, petroleum geologist, whose headquarters are at 50 Church street, here, has rejoined his family in Paris, after spending a part of the winter in Egypt and other parts of the Near East on business.



Left: Jenkins Standard Iron Body Cross Valve, flanged
Above: Jenkins Standard Iron Body Cross Valve on Battery of Compressors

FOR NATURAL GAS—A NATURAL CHOICE

Controlling the flow of natural gas calls for an iron body valve with an iron constitution.

It was a natural choice, therefore, when the Powers Gasoline plant in the St. Louis field in Oklahoma, selected Jenkins Fig. 146 Iron Body Gate Valves for service on the battery of Bessemer compressors shown above. It is the duty of these sturdy Jenkins to control the flow of casinghead gas into the compressor ends of this equipment.

On the toughest valve job you can install a Jenkins with the assurance that it will do its work well and unfaltering-ly for a long period. There is a Jenkins oil-tested valve for every petroleum service, in bronze or iron, in standard, medium or extra heavy patterns. Obtainable through your supply house.

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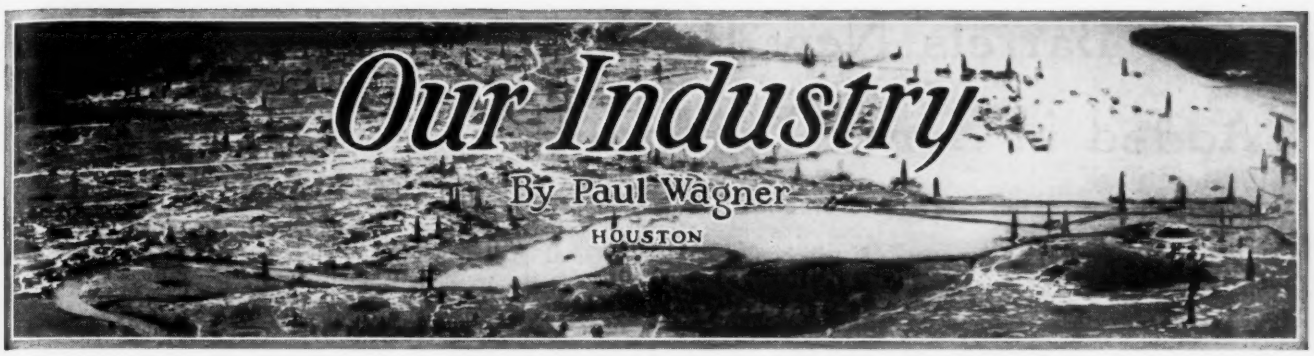
VALVES
Since 1864



G. L. Alexander, formerly cashier and later a vice president of the California Bank, Los Angeles, is now vice president in charge of finances of the MacMillan Petroleum Corp., according to announcement of R. S. MacMillan, president. He assumed his new duties May 1.

* * *

Texas Petroleum Producers Co., which operates a small refinery in the Somerset district, San Antonio, has been merged with the Schimmel Production Co., Fort Worth. Properties have been transferred to a new organization known as the Texas Petroleum Co., with V. G. Schimmel as president; Grover Shaw, vice president; Glen Schimmel, second vice president; C. L. Meserold, secretary; and W. I. Lighthouse, treasurer. Headquarters will be at Fort Worth.

* * *

S. L. Gillan, petroleum geologist and mining engineer, has moved his offices from the Stock Exchange building to the Subway Terminal building, Los Angeles. He will continue practicing his profession with Ralph Arnold and associates.

* * *

Ed A. Landreth, president of the Landreth Production Co., Fort Worth, has been elected to the directorate of the Oil and Gas Bureau of the West Texas Chamber of Commerce. Mr. Landreth supported the chamber's advocacy of an interstate oil conservation compact suggested by Secretary of the Interior Wilbur.

* * *

George H. Forster, for nine years assistant comptroller of the Union Oil Co. of California, Los Angeles, has been elected comptroller. He succeeds R. D. Matthews, formerly comptroller, who last June became vice president in charge of the manufacturing department.

* * *

F. H. Etheridge, land department head, and F. A. Morgan, chief geologist, have been elected to the directorate of the Rio Grande Oil Co., El Paso and Los Angeles. The new directors were instrumental in leasing the ground near Santa Barbara where the Rio Grande is developing the Elwood Terrace field jointly with Barnsdall Oil Co. of California. Other Rio Grande directors are L. E. Lockhart, L. M. Lockhart, Lynn Lockhart, A. M. Lockhart, Charles S. Jones and M. C. Brush.

* * *

G. J. Malherbe, formerly of the Shell-Haven Co., in England, has joined the Shell Oil Co. (California) at its Wilmington refinery.

* * *

L. R. Manning and J. M. Knox have formed a petroleum engineering firm at Los Angeles to be known as Manning & Knox. Mr. Manning was formerly with Standard Oil Co. of California at Huntington Beach. Mr. Knox has been engaged in appraisal work several years.

* * *

Patrick M. Longan, who spent many years at Tampico in charge of International Petroleum Co., subsidiary of the Mexican Seaboard Oil Co. of Maine (John Hays Hammond interests), is now a familiar figure around Los Angeles. The Mexican Seaboard, through its subsidiary Milham Corp., drilled the first producing well of the Kettleman Hills structure, in the San Joaquin Valley, last year.

"Ace" Bland
Who represents the Dunn Manufacturing Co. in Shreveport territory. His territory comprises both Arkansas and Louisiana

* * *

J. P. Edwards is now secretary of the Associated Oil Co., subsidiary of the Tide Water Associated Oil Co., succeeding P. G. Williams, resigned. Mr. Edwards makes headquarters at San Francisco.

* * *

Sheldon Hardin, president of the Southern Crude Oil Purchasing Co., subsidiary of Pan American Petroleum & Transport Co., has returned to Fort Worth headquarters after a late April trip to New York.

* * *

T. H. Sherman, petroleum engineer, formerly associated with the Santa Barbara Oil Co. and the Miley Petroleum Exploration Co., has joined the staff of the Exeter Oil Co., Los Angeles, according to announcement of W. R. Cowan, vice president and general manager.

* * *

Ellsworth McGowan, formerly of the Marland Oil Co. of California, is now active in the affairs of the Kettleman Oil Corp., owner of permit lands in the San Joaquin Valley field from which the corporation takes its name. The properties are operated by the Pacific Western Oil Corp., through contract arrangements with the permit holders.

* * *

M. W. Mattison of New York, tax advisor to the American Petroleum Institute and head of a widely known firm of public accountants, has been spending a few weeks at Los Angeles.

* * *

F. L. Rogers, sales manager, Deepwater Oil Refineries, Inc., has returned to Houston headquarters after a three weeks' trip into marketing territory of the north and east.

* * *

Four marine terminals have been erected in Australia and New Zealand to handle the petroleum products of the Atlantic Union Oil Co., Ltd., according to L. C. Hampton of that organization. Hampton was transferred to the Australia-New Zealand territory about a year ago from Los Angeles, where he was identified with the parent Union Oil Co. of California.

35,515 Barrels New Production Added in Santa Fe Springs

LOS ANGELES, May 10

EIGHT completions and recompletions at Santa Fe Springs added 35,515 barrels of new production to the already overburdened total. Production from 115 wells was up 154,536 barrels per day. The town-lot drillers are putting the brunt of present proration plans on the major companies that have fallen in line.

There were 273 projects heading for zones below the Meyer, including 40 idle wells. Of this total 206 are drilling, 138 are still above or in the Buckbee and Nordstrum zones, and 68 wells are drilling ahead for the prolific O'Connell and doubtful Clarke sands.

Universal Consolidated Oil Co.'s Blanchard No. 8 came in from 6667 feet for an initial production of 6570 barrels. Richfield Oil Co. obtained an initial flow of 2870 barrels from 6519 feet in its Howard No. 5, and St. Helens Oil Co.'s Hill No. 1 made 1175 barrels in 5 hours, or at the rate of 5640 barrels per day. Many such wells as these, flowing for ten days wide open, go a long way toward preventing the hoped for curtailment figure.

Richfield Oil Co.'s Elliott No. 2 is nearing the bottom of the Clarke zone with the drill at 7600 feet. Although this well has cored good looking sand, it has been unable to obtain commercial production, because of the inability to get a successful water shut off.

Associated Oil Co. had some hard luck with its Clarke No. 2, which is bottomed at 7920 feet. Company engineers feel very sure that they have successfully shut off the water that overlies the upper Clarke sand. This well has been a continued source of worry since it reached its present extreme depth.

If the water is actually shut off, other companies that have delayed operations until they knew the results obtained with this well, will proceed along the lines adopted by the Associated. Many of the operators have been of the belief that the water is actually an inherent part of the Clarke sand and that it does not leak in from above.

Renewed interest is observed among operators in the Lawndale field as a result of the recent completion of the San Clemente Oil Co.'s Peck No. 2, located 500 feet south of the discovery well. Latest reports from this well, which is bottomed at 5911 feet, indicate that the initial production of 1050 barrels of 30 gravity oil has slumped to around 800 barrels, with 6 per cent cut.

Peck No. 2 is to the west of Pacific Western Oil Co.'s Howland No. 2, which obtained commercial production for a time, only to have the well sand up. The general belief is that if operators would proceed more carefully and not pass so quickly through the streaked oil sand found in this field while in search of a more solid sand, they would often be able to bring in a sizable well.

Showings in Peck No. 2 and the discovery well were not sufficiently better than the showings in several other wells in this vicinity to warrant the production obtained. Many observers believe that it was the careful and consistent effort on the part of San Clemente engineers that this successful completion was made.

Shell Oil Co. is due for a completion in its Barkdall No. 1, if present indications are of any value. Located on what is thought to be the top of the structure, approximately 600 feet northwest of the discovery well, this hole has casing set at 5310 feet and tubing has been run. Swabbing has, as yet, produced no results but it is expected that with a little patience a producer will be made.

Several other tests will be made within the coming week if successful water shut offs can be obtained. Important among these tests are the Union Oil Co.'s Johnson, which is at 5800 feet, with streaked oil sands over 100 feet thick; Sovereign Oil Co.'s deep test at 7200 feet, two blocks east of the discovery well; and the Ethyl Oil Co.'s O'Gorman No. 1, bottomed at 5830 feet.

Although at the present time it does not seem likely that Lawndale will cause any serious rise in state production totals, there is a possibility that a number of the 70 odd wells that are now at various stages of development will bring in enough oil to justify the money that has been spent on them.

As the time of expiration of some of the Kettleman Hills permits ap-

California production potentials and allowances as given by Umpire Van Deinse in General Order No. 3. This Order is to be effective May 16.

District	Potential Production	Allotted Production	Per Cent of Potential
NORTHERN CALIFORNIA DISTRICTS			
Coalinga	10,207	9,092	89.07
Elk Hills	18,059	16,256	90.00
Fruitvale	349	314	90.00
Kern Front	10,398	7,800	75.00
Kern River	4,397	3,955	90.00
Kettleman Hills	3,590	2,693	75.00
Lost Hills-Belridge	4,789	4,053	84.63
McKittrick	4,773	4,295	90.00
Midway-Sunset	70,960	63,611	89.63
Mount Poso Creek	7	7	100.00
Round Mountain	66	59	90.00
Wheeler Ridge	686	618	90.00
SOUTHERN CALIFORNIA DISTRICTS			
"West" Coyote	9,909	8,918	90.00
Dominguez	11,191	9,770	87.30
Elwood-Goleta	29,958	20,000	66.76
Fullerton-Brea-Olinda East Coyote	15,095	13,585	90.00
Huntington Beach	47,150	42,257	89.62
Inglewood	26,033	23,427	90.00
Lawndale	1,073	966	90.00
Long Beach	211,354	140,007	66.24
Los Angeles-Salt Lake	1,184	1,066	90.00
Montebello	11,293	10,017	88.76
Newport Beach	46	42	90.00
Potrero	800	536	67.00
Richfield	16,441	14,787	90.00
Rincon	4,009	2,934	73.19
Rosecrans	6,460	5,820	90.00
Santa Fe Springs	177,447	125,008	*90.00 †66.83
Santa Marie	4,730	4,254	90.00
Seal Beach	43,950	29,670	67.51
Alamitos Heights	4,925	3,324	67.50
Summerland	130	110	83.85
Torrance	15,277	13,652	89.38
Ventura Avenue	54,768	49,291	90.00
Watsonville	60	54	90.00
Whittier	1,891	1,421	75.09
Total	823,455	633,669	76.95

*Meyer and zones above. †Lower zones.

proaches preparations are being made to spud in a number of new wells. Petroleum Securities has announced a location in sec. 30-23-19 at Kettleman Hills for its Burbank No. 1.

An interesting discovery was made in the Dudley Ridge well located 5 miles east of the axis of the Kettleman Hills structure in sec. 12-23-19. Depth of hole was at one time 1305 feet, but it was found necessary to redrill. While running 10-inch casing in at 1128 feet, it froze and in an effort to loosen the stuck pipe, a bailer was run in. Under the influence of the bailer the well blew in, wrecking the derrick.

Midway Gas Co. gauged the volume of gas to be approximately 35 million cubic feet per day, with some shale and mud thrown out. The gas analysis showed it to contain 98.6 per cent CH_4, 1.4 per cent CO_2, with 997 B.t.u. and with a specific gravity of 57. These characteristics are very similar to those of the gas found at Buttonwillow.

Organization of Federal Permittees Formed

LOS ANGELES, May 11.—Applicants for and holders of federal permits and leases residing in Los Angeles have organized as part of the California Oil and Gas Permittees and Lessees Association. President James P. Sweeney and Secretary Martin Judge, Jr., of the California Oil & Gas Association attended the organization meeting.

K. C. Wallace, and M. Phillip Hansen, two independent operators, together with F. H. Ethridge, of the Rio Grande Oil Co., were elected vice presidents for the southern division.

Suggestions offered at the meeting as solutions of the present difficulties included the following:

Moratoriums for drilling operations on all permits where such a policy will promote conservation; recognition of equities, both as to applications and permits, established through expenditures of money for geological investigations; recognition of the preferential leasing rights of permittees who may make a discovery; and consideration of equities of applicants and permittees in the event of necessity existing for cancellation of application or permits.

Julian Reorganization Is Progressing

LOS ANGELES, May 10.—At a recent meeting it was indicated that Lieutenant-Governor Carnahan of California would become president of the Sunset-Pacific Oil Company, successors to the Julian Petroleum Corp., as soon as the company's board of directors had been elected.

With the election of a permanent board, to take place by June 1, the salvaging of one of the most complete wrecks in the history of California's industrial life will have been accomplished. The failure of this company, two years ago; through the over issue of stocks, usurious interest on loans and rumored corruption, threatened to cause the loss to small stockholders of approximately $30,000,000.

Among those who will be asked to serve on the board are Joseph Scott who with Mr. Carnahan was appointed receiver for the defunct company, Leighton J. King, vice president of the Associated Oil Company, O. R. Rule, a financier, and a Southern Pacific official whose name was not revealed.

The Sunset-Pacific Co. has continued to operate since its organization and according to a recent announcement shows a net profit of nearly $100,000 since January 1, 1929. Further production awaits the election of the permanent board of directors.

Pollution Prevention Work to be Pushed

NEW YORK, May 11.—D. V. Stroop, engineer on the staff of the American Petroleum Institute at its New York office, has been named by Executive Vice-president Boyd to supervise and carry on the oil pollution prevention work of the institute. Mr. Stroop will act as executive engineering secretary of the general committee and as chairman of the technical committee.

Activities of the institute in the prevention of the pollution of streams and shore waters by oil are also to include appointment of seven sectional committees; for the Atlantic Coast, Appalachian district, Great Lakes section, Mid-Continent, Gulf Coast, Rocky Mountain section and Pacific Coast.

A technical committee is also to be appointed to study methods and devices for prevention of pollution. This study will be with a view to the preparation of a code of good practice for prevention of pollution.

Doherty Interests Open California Office

LOS ANGELES, May 10.—Henry L. Doherty Co. interests have taken offices 1165 to 1157 in the Subway Terminal Bldg., 416 South Hill Street Los Angeles, Calif. W. L. Walker transferred from the offices of the Empire Gas and Fuel Co. at Bartlesville, Okla. will represent the Doherty Co. here.

With him are S. E. Murphy representing the Cities Service Refining Co. of Boston, Mass. and the Crew Levick Co. of Philadelphia, Penn., and D. A. Deckman representing the Empire Gas and Fuel Co. At the present time it is the intention of these interests to study the California Oil industry so that at some time in the future they may become more actively engaged.

COLUMBUS, O.—The first event held in the new building of the Battelle Memorial Institute, Columbus, was a luncheon given to the American Chemical Society which held its 77th meeting here during the week of April 29.

Harry M. Runkle, president of the International Derrick & Equipment Co., and president of the board of trustees of the Battelle institute, introduced Dr. Homer W. Gillette, U. S. Bureau of Standards, as the future director of the institute at this luncheon.

Completions in California, Week Ended May 4, 1929

Company	Well No.	Location	Depth	Init. Prod.
Long Beach				
Apex Oil Co.	13B	....	6895	330
Hancock Oil Co.	Signal 17	....	7188	3700
Santa Fe Springs				
Getty, George F.	No. 22	....	6393	4000
Getty, George F.	No. 26	....	6385	5555
Richfield Oil Co.	Howard 1	....	6463	3865
The Texas Co.	Matern 3-13	....	6910	3550
The Texas Co.	Matern 3-11	....	6700	2800
Twin Bell Synd.	3-1	....	6500	1460
Seal Beach				
Marland Oil Co.	Bixby 23	....	5645	2100
Baldwin Hills				
Shell Oil Co.	Rindge 3	....	2650	(Recomp) 157
Ventura Avenue				
Associated Oil Co.	Lloyd 65	....	7345	4450
Associated Oil Co.	Hartman 9	....	7300	950
Rincon				
General Pet. Corp.	Thomson 3	....	3463	510
Belridge				
Belridge Oil Co.	No. 30	....	699	45
Kern Front				
Chanslor-Canfield-Midway Oil Co.	No. 24	....	2155	925
Round Mountain				
Shell Oil Co.	Freeman 4	....	1726	190

Completions in Oklahoma and Kansas, Week Ended May 11, 1929

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	2	NE NW SE 19-1-3 W	3296-3302	10
Magnolia	3	NEc 30-1-3 W	2716-2819	30
Magnolia	5	NW SE SW 33-1-3 W	3844-4105	35
Magnolia	1	NEc 8-1-3 W	T.D. 4937	Dry

Cotton County

Consolidated	1	NEc SW 11-3-12 W	T.D. 2502	Dry
Silurian	4	NEc SE SW NW 2-2-10 W	2170-2177	45
Silurian	5	SWc NW SE NW 2-2-10 W	2158-2170	40

Creek County

Detrick et al	1	NEc 25-14-9 E	2937-2952	60
Beal-Plumb	1	NW SE NW 26-18-9 E	T.D. 2019	Dry
Smith-Coffee	2	CWL NW NW 19-18-11 E	T.D. 732	Dry
Tibbens	2	SWc SE 26-15-8 E	T.D. 3227	Dry
Wilcox	1	NWc 30-14-10 E	T.D. 3000	Dry

Garvin County

Magnolia	6	SWc NW SE SE 14-1-3 W	T.D. 1865	Dry

Grady County

Clark-Cowden	3	C SW SW 23-5-7 W	1933-1952	Dry

Haskell County

San Bois	1	CEL NE NE 22-8-20 E	839-920	1.5M

Hughes County

Superior-Amerada	1	SWc SE 4-8-9 E	2935-3030	1M
Bunte et al	1	NEc NW 12-8-8 E	3373-3382	155
I. T. I. O.	3	SW SE SW 8-5-8 E	2687-2725	270
Prod. & Ref. Corp	1	C NE NW 34-9-10 E	T.D. 3231	Dry

Jefferson County

Beck	2	SEc SW SW SE 35-6-5 W	1197-1217	140

Kiowa County

Bickett et al	2	C NW SE 19-6-16 W	T.D. 695	Dry

Muskogee County

Arthur	10	C NE SW 33-15-18 E	1068-1088	20
Metzger	8	SWc NE SW 1-14-18 E	882-905	30

Okfuskee County

McMahon	2	SWc NW SE 29-12-10 E	3155-3171	400
Atlantic	6	SEc 11-10-11 E	2098-2111	30
Mid-Cont. et al	1	NWc NE 33-10-9 E	T.D. 3551	Dry

Oklahoma County

I. T. I. O.	1	SWc NW 19-11-2 W	4009-4022	55M

Okmulgee County

Amer.-Maracaibo	1	NEc NW SE 27-12-12	3336-3374	170
Wheeler et al	1	NW SE SE 9-14-12 E	T.D. 2792	Dry
Leard	1	NWc NE NW NE 19-11-13 E	T.D. 3980	Dry

Osage County

Fields-Potts	3	SW NE NW 30-23-12 E	T.D. 1810	Dry
Stanley	2	NE SE NE 14-21-8 E	T.D. 607	Dry
Moore Est et al	22	SEc SW 9-21-9 E	T.D. 2705	Dry
Kay County	6	SW SE NW 22-24-7 E	2380-2426	32M
I. T. I. O.	408	NEc 27-27-11 E	1885-1916	1¾M

Pawnee County

Hay et al	1	SE SW SW 26-20-9 E	2019-2060	85
Sears et al	2	NEc NW NW 35-20-9	2017-2067	90
Pure	1	NWc SE 35-20-6 E	T.D. 3677	Dry

Pontotoc County

Ramsey	1	NEc SE 1-4-7 E	2016-2024	38
Superior	3	SW NW NW 32-5-5 E	2515-2625	80

Pottawatomie County

Sinclair	1	NE SE NW 18-7-5 E	4015-4151	35
Magnolia	1	NW NE SW 18-7-5 E	4170-4310	30
Gypsy	3	SW NW NE 26-7-4 E	4228-4238	345
Carter	1	NE SE NW 26-7-4 E	3920-4259	90
Magnolia	2	NWc NE 22-7-4 E	3640-3665	12M
Minnehoma	1	NWc SE 16-7-4 E	3653-3980	70
Independent	3	SWc 14-7-4 E	4471-4212	OWD 230
Magnolia	2	NW NE NW 20-8-5 E	4287-4323	490
Tidal	2	NE SW SW 18-8-5 E	4158-4179	345
Pine	2	NW SW NE 18-8-5 E	4140-4144	225
Mid-Continent	3	SW NE NE 18-8-5 E	4096-4109	20
Pine	1	SWc NE 8-8-5 E	4006-4041	955
Amerada	1	SWc NE 7-8-5 E	4200-4306	290
Prairie	7	SW NE SW 18-8-5 E	4335-4337	560
Prairie	8	NW SE SW 18-8-5 E	4131-3154	90
Pure	2	SE SW NW 17-8-5 E	T.D. 4087	Dry
Pure	1	SWc NW 17-8-5 E	T.D. 4531	Dry
Amerada-Marland	2	SWc NW 7-8-5 E	T.D. 4446	Dry
Phillips	2	SWc SE 6-8-5 E	T.D. 3285	Dry

Seminole County

Gypsy	1	NE SE NW 27-10-7 E	T.D. 4548	Dry
Marland	1	NW SE NE 5-10-7 E	T.D. 4942	Dry
Sunray	1	NE SE SW 7-5-8 E	T.D. 4270	Dry
Magnolia	1	SW SE SE 24-8-5 E	T.D. 4551	Dry
Sinclair	1	NE NW SW 18-5-8 E	2392-2432	60
Louisiana	2	SW SE SW 7-5-8 E	2694-2730	OWD 40
Mid-Continent	4	SE NW NE 5-7-7 E	4223-4235	5835
Carter	3	NEc NW 18-8-6 E	4395-4399	1250
Marland	4	NW SE SW 7-8-6 E	4263-4277	280
Carter	1	NEc SE 10-9-6 E	3991-4069	4175
Burke-Greis	3	NEc 1-9-5 E	4382-4396	1200
Gypsy	1	SE NW SE 32-10-6 E	4317-4330	635
Prairie	1	SWc 1-7-6 E	4204-4215	335
Prairie	3	NE NW SW 26-7-6 E	3234-3246	445
Prairie	4	NEc SW 26-7-6 E	3140-3160	50M
Prairie-Slick	2	SW NW NW 26-7-6 E	3150-3166	1200
Prairie	5	SW SE SW NE 24-9-5 E	3993-4008	1200
Prairie	6	NW SE NE 24-9-5 E	4010-4012	960
Prod. & Ref.	2	SE SW NW 24-7-6 E	4334-4345	900

Tulsa County

Baker	1	SEc NE 26-19-11 E	2186-2195	15

Wagoner County

Horner	1	NWc SE 34-18-17 E	839-847	2M

KANSAS

Butler County

Empire	10	SWc SE 27-27-5 E	2702-2735	125

Cowley County

Benedum-Trees	6	SWc SE 10-31-3 E	3062-3079	30

Ellis County

Gypsy	1	SEc 36-12-16 W	2969-2972	200

McPherson County

Mid-Kans	1	C NW SW 8-20-4 W	T.D. 4000	Dry

Russell County

Gypsy-Marland	1	SWc NW 28-13-15 W	T.D. 3348	Dry
Liggett et al	1	NEc 20-11-15 W	2975-3015	40

Sedgwick County

Connell et al	1	NEc 27-25-1 W	T.D. 2695	12
Prairie et al	3	SW SE SE 36-25-1 W	T.D. 3399	150
Marland	2	NW NE SW 16-25-1 W	3004-3038	400
Prairie et al	4	SEc 36-25-1 W	T.D. 3647	Dry
Bu Vi Bar et al	1	SW SE SW 12-25-1 W	T.D. 3505	Dry
Ramsey	1	SWc 1-25-1 E	T.D. 3503	Dry
Skelly	1	SWc 31-25-1 E	T.D. 285	Dry

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended May 11, 1929

OKLAHOMA

Beckham County

Company	Well No. & Farm	Location	
Coogan	1-Holmberg	CEL SW SW NE 35-9-25 W	

Carter County

Magnolia	2-Putnam	NEc SW 30-1-3 W	
Sturm	3-Fish	NW SE SW 35-3-2 W	

Cotton County

Bridwell et al	1-Crow	SEc SW SW 24-1-11 W	

Creek County

Flynn-Morgan et al.	1-Wilson	SW SE SE 2-18-9 E	
Stebbins	1-Fulsom	NWc NE SW 17-17-10 E	
Supees et al	1-Keystone	NWc SE SE 4-17-11 E	
McCready et al	1-Hardridge	SEc NW SE 30-17-11 E	
Tibbens	41-Connesseny	SWc NW SW NE 30-15-9 E	
Texas	1-Harjo	NEc NW 35-14-9 E	

Hughes County

I. T. I. O.	1-Godfrey	NE NW SE 6-8-9 E	
Amerada	1-Deere	NWc SW 4-8-9 E	

Kay County

Harris-Haun	2-School Land	C NE NE 36-28-1 W	

Kiowa County

Alexander et al	3-Fuqua	SEc SW SW NE 18-6-16 W	OWD
Rymer et al	1-Weidel	C NE NE 5-6-16 W	

Muskogee County

Foltz	2-Taylor	SE SE 28-15-17 E	OWD
Pure	5-Cherry	SEc SW NW 14-14-16 E	OWD

Okfuskee County

Champlin	4-Jefferson	C NW NW 23-11-11 E	
Superior et al	1-Carolina	SEc 6-11-7 E	
Mid-Cont. et al	1-McCoy	SW NE NE 31-11-11 E	

Oklahoma County

Franklin	2-Lowery	C E½ W½ NW 12-11-3 W	

Okmulgee County

Wheeler et al	1-Finerty	SEc 31-16-12 E	

Osage County

Lewis Prod. et al.	4	NE SE SE 15-26-6 E	
I. T. I. O.	406	NWc SE SE NW 30-25-8 E	
I. T. I. O.	407	SEc NW SE 18-25-12 E	
Peters	3	CNL SW 32-24-9 E	
McCune-Wormser	2	C NE 15-24-8 E	
Wrightsman	1	NEc SW 32-22-8 E	
Pure	4	SEc NW 36-22-8 E	
Barnsdall et al	3	SW NE SE 22-22-11 E	

Pawnee County

Gled	1	NW NE NE 25-21-7 E	

Pontotoc County

Company	Well No. & Farm	Location
Markham-Pugh	1-Wade	SEc NW 1-4-7 E
Homaokla	4-Ritchey	NW NE SE 1-4-7 E

Pottawatomie County

Slick	3-Welden	CWL SE NW NW 20-6-4 E
Slick	4-Bledsoe	NE SW NW 20-6-4 E
Independent	1-Lynch	CEL SE NW NW 20-6-4 E
Texola Drlg	1-Townsite	NWc NE NW 19-6-4 E
Simms	2-Laster	NEc 19-6-4 E
Indep.-Twin State	1-Gardner	NE SW SE 19-6-4 E
Reynolds	1-Townsite	SEc SW SW SE 18-6-4 E
Reserve	1-Townsite	SEc NW SE 18-6-4 E
Hall-Briscoe	1-Townsite	SEc SW SE 18-6-4 E
Indep.-Twin State	1-Newell	SWc SE 17-6-4 E
Sinclair	1-Nadash	NE SW NW 29-7-5 E OWD
Darby	1-Nixon	SWc 9-7-4 E
Phillips	2-Martin	SEc NE 2-7-4 E
Martin-Erwin	2-Kelly	NEc 2-7-4 E
Carter	1-Bodkin	SEc SE 2-7-4 E
Pure	2-Tolen	SWc NW 1-7-4 E
Indep.	2-Borrows	NWc 1-7-4 E
Gypsy	1-Kennedy	NWc SW 1-7-4 E
Superior	1-Jackson	SWc 36-8-4 E
Amerada-Barnsdall	4-Wallace	SW SE SW 17-8-5 E
Phillips-Furhman	1-Raper	SWc SE 33-8-5 E
Prairie et al	2-Pugh	SE SW SE 7-7-5 E
Prairie et al	1-Bebee	NW SE SE 19-6-4 E

Seminole County

Harris et al	1-Miller	NWc NE 8-8-8 E
Magnolia	2-Coody	NW NE SE 18-9-7 E
Sinclair	1-Coody	NW NE SW 17-9-7 E
Gypsy	1-Harjo	NW NE NE 20-10-7 E
Sinclair	1-Phillips	NW NE SE 5-7-7 E
Gypsy	3-Payne	NW SE NE 5-7-7 E
Twin State et al	1-Anderson	SE SW NE 22-9-5 E
Cosden	1-Barber	NE SW SW 13-9-5 E
Skelly-Prairie-Slick	1-Varnum	NWc 5-9-6 E
Texas	5-Hotulke	SE SW NW 23-7-6 E
Empire	12-Cluck	SW NE SE 11-8-5 E
Empire	11-Cluck	NW SE NE 11-8-5 E
Barnsdall	1-Johnson	SEc 22-10-6 E
Mid-Continent	3-Eleck	NW NE SE 23-7-6 E
Mid-Continent	8-Smith	SE SW NE 5-7-7 E
Carter	3-Cudjo	SW NW SE 23-7-6 E

(*Continued on Page 55*)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended May 11, 1929

(*Continued from Page 54*)

Company	Well No. & Farm	Location	
Barnsdall	9-Coker	NW SW SW 11-8-5 E	
Gypsy	4-Cotcha	NE NW SW 23-7-6 E	
Wagoner County			
Wright-Kunkel	2-Oliver	CSL NW SW 3-16-15 E	
KANSAS			
Barber County			
Robertson et al	1-Powell	C SE SE 11-32-10 W	
Barbara	1-Angel	C NW NE 14-33-13 W	
Butler County			
Connell-Slick	1-Zeist	SW NE NW 14-27-5 E	
Crawford et al	1-Thompson	NWc SW 2-24-3 W	
Lilly-Schreck	1-Barrett	NE NW NW 17-25-7 E	
Patten et al	2-Marshall	SW SE SW 11-27-5 E	
Garden	1-Morgan	SEc SW 13-27-5 E	
Cowley County			
Indep.-Vickers	2-Youle	SE NE NE 16-32-4 E	
Kentucky Nitro. & Oxyg.	1-Radcliffe	C SW SW 4-33-7 E	
Elk County			
Hood-Frazier	1-Logsden	C SE SE 25-30-9 E	
Denton-Morrow	1-Lovett	SW NE NW 15-31-10 E	
Greenwood County			
Phillips	1-McCray	SEc NE 9-22-10 E	
Phillips	2-Pixlee	SE NE NW 10-22-10 E	
Transc	4-Pixlee	SW NW NE 10-22-10 E	
Henderson-Holden	1-Pixlee	NW SW NE 10-22-10 E	
Empire	1-Norton	SWc SE 15-22-12 E	
Empire	1-Holderman	SEc SW 15-22-12 E	
Shell	1-Pees	NEc NW 22-22-12 E	
Texas	3-Edwards	SW NW SE 21-23-11 E	
Empire	13-Edwards	NW SE NW 21-23-11 E	
Empire	2-Laird	SE NE SW 21-23-11 E	
Empire	1-Patterson	NW NE SW 36-23-11 E	
White	8-Graham	CSL SE NW 35-25-10 E	
McPherson County			
McPherson	1-Chinberg	C NW NW 18-19-2 W	
Morris County			
Gen. Utilities	1-Midcaff	SW SE NE 15-16-7 E	
Osborne County			
Mid-Kansas	1-Boyce	SEc NW 18-6-13 W	
Sedgewick County			
Marland	1-Block	SW SE NW 16-25-1 E	
Barnsdall	1-Samuels	NEc NW 24-25-1 E	OWD
Alladin	2-Benningfield	SW NW SW 6-26-1 E	
Bu Vi Bar et al	3-Bright	SWc NE SW SW 6-26-1 E	
Bu Vi Bar et al	4-Bright	NWc SE SW SW 6-26-1 E	
Derby	4-Gorman	NWc SW NW SW 6-26-1 E	
Robertson et al	1-Creasson	NWc SW SW SW 6-26-1 E	
Shell	1-Fishcer	NEc SE 15-26-2 E	
Bu Vi Bar et al	2-Carr	NW NE SE 1-26-1 W	
Bu Vi Bar et al	3-Carr	SE NE SE 1-26-1 W	
Bu Vi Bar et al	4-Carr	NE NW SE 1-26-1 W	
Davis-Skelly et al	7-Wilson	SW SE NE 1-26-1 W	
Wentz	1	SE NE NW 1-26-1 W	
Bu Vi Bar et al	2-Lentz	SEc 12-26-1 W	
Dickey et al	1-Nolan	SEc NE 20-28-1 E	
White Eagle	1-Robbins	NEc SE 20-28-1 E	
Hartman-Skaer et al.	1-Campbell	NW SW SE 21-28-1 E	
Shell	1-Nolan	SWc NW 21-28-1 E	
Smith-Ashe	1-Van Arsdale	NEc 29-28-1 E	
Johnson-Marshall	1-Roy	NE SE SW 23-29-1 W	
Sumner County			
Champlin	4-Latta	NW SE NW 9-30-2 W	OWD
Champlin	1-Love	NW NE SW 9-30-2 W	OWD
Gypsy-Blankenship	1-Boberk	C SW NW 27-34-4 W	
Woodson County			
Skelly	1-Central Trust Co.	NEc SE 17-24-14 E	
TEXAS			
NORTH CENTRAL AND EAST CENTRAL			
Brown County			**Survey**
Campbell et al	1-Reynolds	Blk-4	Metcalf
Baker-Kynard et al	1-Marr	....	Gillispie
Humble	12-Bayler	Blk-43	T&NO
Graham-Lash	5-Gwyer	....	Batton
Carnfill-Rey. et al	2-Moss	Blk-62	Fuggle
Birder	2-Cross	Blk-623	Honeycutt
Lloyd	12-Collier	Blk-139	Smith
Janellen	1-Higgins	Sec-19 Blk-101	Nixon
Callahan County			
Moutray	7-Hatchett	Sec-23	D&DA
Texas	3-Hatchett	Sec-24	D&DA
York	4-Kile	Sec-2280	TE&L
Warren et al	2-Hatchett	Sec-24	D&DA
Humble	2-Johnson	Sec-29 Blk-8	SP
Comanche County			
Fain	1-Poteet	Sec-45	D&DA
Coleman County			
Cont. et al	8-Overall	Blk-66	Overall
Dallas	5-Babbington	Blk-79	Rose
Atlantic-Midsun	1-Dougherty	Sec-10 Blk-1	GH&H
Canyon	1-Keller	Sec-9 Blk-161	White
Eastland	3-Morris	Sec-14 Blk-722	Webber
Eastland County			
Crabb-McNeck-Canyon	1-Turner	Sec-30 Blk-2	H&TC
Belva	1-Stimmett	Sec-56 Blk-4	BBB&C
Southern	1-Owens	Sec-48 Blk-4	H&TC
Chestnut-Smith	1-Flemming	Sec-61 Blk-4	H&TC
Texas Dev. et al	1-Lewis	Sec-43 Blk-4	H&TC
Erath County			
Frazier-Watson	1-Blanton	.....	Survey No. 14
Jack County			
Upham	1-Keyer	.....	Toby
Palo Pinto County			
Wickens et al	1-Hart	.....	Ashworth
Brazos River	2-Wester	.....	Miller
Runnells County			
Pure	3-Guisecker Bros.	Blk-227	Hughes
Pure	2-Guisecker Bros.	Blk-227	Hughes
Pure	1-Guisecker Bros.	Blk-227	Hughes
Shackelford County			
Ritterbush et al	1-Nail	Sec-41	ET
Best et al	1-Isenhower	.....	Brister
Campbell et al	1-Reynolds	Sec-11 Blk-11	T&P
Stephens County			
Clark et al	1-Jackson	Sec-20 Blk-6	T&P
Mid-Tex	9-Cunningham	Sec-1210	TE&L
Lawton et al	1-McClesky	Sec-74 Blk-6	T&P
NORTH TEXAS			
Archer County			
Continental	1-Richardson	Blk-10	McCoy
Freeman-Grebin	5-Hennig	.....	Pasture
Pet. Prod.-Humble	1-Falls Co. Sch. Ld.	Blk-60	FCSL
Texas et al	2-Kemp	Blk-67	KWVFL
Hi-Land	1-Bridwell	.....	Wright
Hines	1-Dowlen	.....	H&TC
Payne et al	3-Parrish	.....	SP
Sheldon	2-Chilson	League-3 Blk-2	DCSL
McCarty	.....	Blk-292	Geraldine
Atlantic et al	2-Andrews	.....	Whitaker
Estacaba	1-Ball	Blk-10	Nunley
Smith	3-Prideaux	Sec-1860	T&L
Peacock	1-Williams	.....	Swing
Pandem	5-Wallace	League-3	DCSL
Cooke County			
Shell	8-Dennis	.....	Hutchinson
Sinclair	1-Emby	.....	ET
Kewanee	18-Hyman	.....	ET
Benson Bros. et al.	1-Haverkamp	.....	Burdett
Kewanee	17-Hyman	.....	ET
Lloyd	2-Wheelock	.....	Underwood
Grayson County			
Murchinson	1-Wahol	.....	Ingram
Wichita County			
Reno-Goldsmith	1-Roller	Blk-8	Maverick
Hunter	2-Waggoner	Sec-3 Blk-10	GC&SF
Heydrick-Stumpf	2-Boyd	Blk-11	Lewis
Rowe et al	2-Waggoner	Sec-2 Blk-13	GC&SF
Hines	4-Burnett	Blk-6	Meade
Barclay-White	1-Logan et al.	Blk-37	KWVFL
Barclay-Faith	2-Kemp et al.	Blk-40	KWVFL
Comac Drlg. et al.	5-Bishop	.....	Netherly
Wilbarger County			
Fain-McGaha	AA-5-Waggoner	Sec-18 Blk-4	H&TC
Phillips	S-3-Waggoner	Sec-45 Blk-4	H&TC
Phillips	U-3-Waggoner	Sec-44 Blk-4	H&TC
Baker et al	G-1-Waggoner	Sec-22 Blk-4	H&TC
Fain-McGaha	L-12-Waggoner	Sec-31 Blk-4	H&TC
Waggoner	J-1-Waggoner	Sec-25 Blk-4	H&TC
Roberts	2-Waggoner	Sec-10 Blk-4	H&TC
Melot et al	A-3-Waggoner	Sec-10 Blk-4	H&TC
Carter	2-Waggoner	Sec-9 Blk-4	H&TC
Lewis-Payne	2-Waggoner	Sec-17 Blk-4	H&TC
Barkley-Meadows	B-1-Waggoner	Sec-17 Blk-4	H&TC
Staley-Wynne	F-7-Waggoner	Sec-32 Blk-4	H&TC
Staley-Wynne	S-1-Waggoner	Sec-25 Blk-4	H&TC
Robertson et al	1-Waggoner	Sec-15 Blk-4	H&TC
Phillips	DD-2-Waggoner	Sec-42 Blk-4	H&TC
Young County			
Perkins-Butler	1-Whitt	Sec-160	TE&L
M & V et al	1-Williams	Sec-155	TE&L
Smith et al	1-Bentley	Sec-283	TE&L
Walton et al	4-Prideaux	.....	Tynes
Steed-Gaus	16-Snider	.....	Wilson
Riggs et al	27-McKinley	Sec-1489	TE&L
Callender	1-Hamilton	Sec-3401	TE&L
Rathke-Panhandle	16-Prideaux	.....	Rohus
PANHANDLE			
Crane County			
Holmes et al	2-Quinn	Sec-7 Blk-9	I&GN
McConnell	1-McConnell	Sec-65 Blk-4	I&GN
Gray County			
Shamrock	3-Clayton	Sec-50 Blk-25	H&GN
Shamrock et al	1-Clayton	Sec-50 Blk-25	H&GN
Texas	2-Shaw	Sec-5 Blk-1	ACH&B
Phillips	1-Morse	Sec-68 Blk-25	H&GN
Danciger-Washoma	2-Smith	Sec-149 Blk-3	I&GN
Danciger	1-Davidson	Sec-86 Blk-B-2	H&GN
Hutchinson County			
Phillips	2-Trigg	Sec-2 Blk-O-b	Trigg
Phillips	4-Sanford	Sec-78 Blk-46	H&TC
Danciger	1-Moore	Sec-125 Blk-4	I&GN
Moore County			
Amarillo	1-Reed	Sec-14 Blk-12	D&P
Randall County			
Patterson et al	1-Campbell et al.	Sec-60 Blk-K-14	TT
Wheeler County			
Lela	6-Williams	Sec-9 Blk-27	H&GN
Lela	5-Williams	Sec-9 Blk-27	H&GN
Martin-Debans	1-Griswold	Sec-1 Blk-24	H&GN
Wishkamper et al.	1-Guest	Sec-28 Blk-17	H&GN
Magnolia	1-Trostle	Sec-130 Blk-23	H&GN
WEST TEXAS			
Crane County			
Gulf Prod	63-McElroy	Sec-200 Blk-F	CCSD
Glasscock County			
Gibson-Johnson	1-Dean	Sec-2 Blk-33	T&P
Garza County			
Emerald	1-Boren	Sec-137 Blk-5	H&GN
Howard County			
Amerada	9-Roberts	Sec-123 Blk-29	W&NW
California	1-Roberts	Sec-137 Blk-29	W&NW
Peck et al	1-Scrivner	Sec-12 Blk-33	T&P
Mitchell County			
Spencer et al	1-Brown	Sec-37 Blk-25	T&P
Williams et al	1-Sanford	Sec-55 Blk-10	H&TC
Cromwell et al	1-Jackson	Sec-28 Blk-3	H&TC
Matador	3-Smith	Sec-24 Blk-194	TC
Plymouth	1-Perry	Sec-29 Blk-178	TC
Reagan County			
Big Lake	160-Univ.	Sec-2 Blk-2	Univ.
Schleicher County			
Underwood	1-Fisdole	Sec-74 Blk-11	GC&SF
Winkler County			
Magnolia	2-Scarborough	Sec-1 Blk-C-22	PSL

Completions in Texas, Week Ended May 11, 1929

NORTH CENTRAL AND EAST CENTRAL

Brown County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Moore	1-Cross	Honeycut	Blk-623	1142-1156	200
McClung	2-Brooksmith	Thom	Blk-53	1785-1885	4
Lloyd	11-Stanley	Smith	Blk-139	406-428	6
Lloyd	19-Collier	Smith	Blk-139	410-422	3
Lloyd	18-Collier	Smith	Blk-139	409-429	4
Humble	11-Byler	T&NO	Blk-43	1302-1317	5
Williamson et al.	5-Eddington	Mitchell	Blk-141	T.D. 1175	Dry
Lloyd	20-Collier	Smith	Blk-139	T.D. 479	Dry
Amer.-Maracaibo	4-Cross	Kenney	Blk-624	T.D. 1087	Dry

Callahan County

Texas	2-Hatchett	D&DA	Sec-24	426-436	25
Texas	1-Hatchett	D&DA	Sec-24	424-430	25
Moutray	6-Hatchett	D&DA	Sec-23	431-436	30
Moutray	2-Finley	BOA	Sec-75	361-375	1¾M
Humphries	4-Gary	D&DA	Sec-40	413-417	8
Beams	2-Snyder	BBB&C	Sec-140	1120-1152	1½M
Gibson-Johnson	1-Tatum	Waters		T.D. 752	Dry
Warren et al	1-Hatchett	D&DA	Sec-24	T.D. 440	Dry

Coleman County

Stepp-Kriston	1-Shore	GH&H	Sec-72 Blk-1	T.D. 2315	Dry
Roth-Faurott	1-Smith	GH&H	Sec-19 Blk-1	T.D. 3205	Dry
Texas Pacific	1-Gay	Fisk	Blk-630	1365-1367	10

Eastland County

Thompson et al	1-Green	SP	Sec-458	T.D. 2217	Dry
Southern Crude	1-Thorpe	SP	Sec-456	1728-1730	2.7M

Jack County

Harper et al	1-Box	Hughson		3098-2100	440

McCulloch County

Hartshell et al	1-Stulhammer	Stulhammer	Blk-160	T.D. 610	Dry

Shackelford County

Tannehill et al	1-Elliott	LAL	Sec-9	T.D. 720	Dry
Roeser-Pendleton	1A-113-Cook	ET	Sec-113	T.D. 1570	Dry
Ohio Texas	13-Mathews	ET	Sec-29	1126-1149	265
Ohio Texas	12-Mathews	ET	Sec-29	1129-1147	400
Ohio Texas	11-Mathews	ET	Sec-29	1133-1153	450
Ohio Texas	10-Mathews	ET	Sec-29	1128-1149	520
Ohio Texas	9-Mathews	ET	Sec-29	1126-1137	300

Throckmorton County

Bearman	1-Liadbetter	Riddle		T.D. 801	Dry

NORTH TEXAS

Archer County

Moran Drlg. et al.	1-Bloodworth	Cartwright		1201-1206	45
Lea-Daniels	7-Williams	Hand		587-593	20
Hines	2-Wallace	DCSL	League-3 Blk-2	1776-1780	27
Gwynn et al	1-Moore	ATNCL	Sec-20 Blk-16	1580-1586	118
Freeman-Grebin	1-Easterling	Meade	Blk-20	1439-1442	20
Beasley	3-Abercrombie	Harris	Blk-41	1387-1390	15
Christie et al	1-Campbell	Armes		T.D. 1351	Dry
Texas	1-American	KWVFL	Blk-69	T.D. 1912	Dry
Peacock	1-Inman	McKimbs		T.D. 700	Dry
Peacock	1-Herron	TE&L	Sec-1831	T.D. 1010	Dry
Panhandle et al	1-Snider	Pearce		T.D. 803	Dry
Johnson-Frazier	1-Wallace	DCSL	League-3 Blk-11	T.D. 1790	Dry
Humble	1-Falls Co. Sch. Ld.	FCSL	Blk-31	T.D. 1284	Dry
Gulf Prod	3-Ward	Tomlinson		T.D. 1157	Dry
Bailey	1-Jackson	Aldridge	Blk-136	T.D. 1557	Dry

Cooke County

Texas	1-Dennis	Stump		T.D. 1703	Dry
Green et al	1-Moon et al.	BBB&C		T.D. 2022	Dry
McAnderson et al.	1-Jones	Arocha		T.D. 1860	Dry
Texas	8-Dennis	Hutchinson		1258-1273	150
Shell	7-Dennis	Hutchinson		1251-1256	128
Shell	8-Dennis	Hutchinson		1253-2166	38
Pure	6-Emby	Moss		1361-1365	112

Childress County

Texas	1-Smith	WNW	Sec-774 Blk-H	T.D. 4571	Dry

Grayson County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Simpson-Fell	1-Guillond	Ingram		847-854	5&5M

Montague County

Gulf Prod	1-Willett et al.	Kaufman Co. Sch. Ld. Blk-95		T.D. 2504	Dry

Wilbarger County

Lawson et al	D-1-Waggoner	H&TC	Sec-29 Blk-4	T.D. 2493	Dry
Robertson	1-Waggoner	H&TC	Sec-10 Blk-4	1977-1990	135
Staley-Wynne	F-5-Waggoner	H&TC	Sec-32 Blk-4	2411-2422	320
Staley-Wynne	B-2-Waggoner	H&TC	Sec-25 Blk-4	1909-1910	205
Phillips	II-4-Waggoner	H&YC	Sec-45 Blk-4	2379-2395	25
Phillips	DD-1-Waggoner	H&TC	Sec-42 Blk-4	2287-2290	74
Golding-Cochran	H-3-Waggoner	H&TC	Sec-32 Blk-4	2434-2444	200
Carter	1-Waggoner	H&TC	Sec-9 Blk-4	1987-1993	90
Burton	C-1-Waggoner	H&TC	Sec-18 Blk-4	2409-2428	115

Wichita County

Panhandle	2-Burnett	Meade		1400-1407	46
Comac Drlg. et al.	7-Bishop	Netherly		T.D. 900	Dry

Young County

Wooten-Reed	1-Alexander	Tynes		T.D. 590	Dry
Underwood Drlg. et al.	1-Edwards	TE&L	Sec-1499	T.D. 850	Dry
Sun	1-Rogers	TE&L	Sec-229	T.D. 1063	Dry
Riggs-Oliphant	2-Langston	TE&L	Sec-1490	T.D. 623	Dry
Cont.-Underwood Drlg.	2-Campbell	TE&L	Sec-1376	T.D. 927	Dry
Gifford	5-Miller	Rohus	Blk-7	T.D. 770	Dry
Gifford	4-Miller	Rohus	Blk-6	T.D. 801	Dry
Gifford	3-Miller	Rohus	Blk-6	T.D. 805	Dry
Gifford	2-Miller	Rohus	Blk-6	T.D. 840	Dry
Gifford	1-Miller	Rohus	Blk-4	T.D. 828	Dry
Kimbrell-Lyles et al.	2-Dyer	Stroud		587-606	3
Bratcher	3-Prideaux	Tynes		470-498	5

PANHANDLE

Carson County

Gulf Prod	1-Cooper	I&GN	Sec-5 Blk-9	3068-3149	337

Gray County

Magnolia	1-Gethings	H&GN	Sec-14 Blk-A-9	2710-3075	2M
Texas	10-Saunders	Eustice	Sec-1	2649-2656	387
Guernsey	1-Banum	I&GN	Sec-188 Blk-3	3318-3325	10
Empire	1-Jackson	H&GN	Sec-185 Blk-B-2	3169-3364	25
Mid-West Explor.	1-Bowers	H&GN	Sec-93 Blk-B-2	3163-3297	30
Southern Pet. Ex.	4-McConnell	I&GN	Sec-174 Blk-3	3212-3248	1454
Travis et al	1-Morse	H&GN	Sec-68 Blk-25	2792-2805	120

Hutchinson County

Antelope Creek	3-Sanford	H&TC	Sec-82 Blk-46	3045-3090	15
Timms et al	1-Moore	TC	Sec-21 Blk-M-21	3090-3100	110
Phillips	3-Garland	H&TC	Sec-77 Blk-46	2952-2964	225

Moore County

Devonian	1-Sneed	Robinson		T.D. 3455	Dry
Skelly	6-Armstrong	Proctor		3158-3174	300
Dixon Creek	4-Sneed	G&M	Sec-65 Blk-GM-3	3238-3356	9M

Wheeler County

Vaughn et al	1-Woodley	H&GN	Sec-21 Blk-24	T.D. 2400	Dry
Arnold et al	1-Nelson	H&GN	Sec-5 Blk-24	2205-2214	8½M
Holmes et al	1-Close	H&GN	Sec-82 Blk-23	1280-1375	64M
Lone Star	1-Turnbow	H&GN	Sec-67 Blk-17	1775-1800	8M
Upham	1-Robo	H&GN	Sec-105 Blk-23	1884-1976	24M

WEST TEXAS

Howard County

Ward	3-Roberts	W&NW	Sec-137 Blk-29	2957-2980	1890

Mitchell County

Magnolia	6-Foster	T&P	Sec-17 Blk-29	2775-2875	106
Adams	1-Elwood	SP	Sec-20 Blk-18	T.D. 659	Dry
McGinley et al	1-Hyman	SP	Sec-36 Blk-17	T.D. 730	Dry

Reagan County

Big Lake	159-Univ.	Univ.	Sec-1 Blk-2	2905-2911	125
Big Lake	149-Univ.	Univ.	Sec-1 Blk-2	2936-2975	100

Completions in North Louisiana and Arkansas, Week Ended May 9, 1929

Louisiana

Caddo Parish—Caddo District

Company	Well	Location	Depth	Yield
L. M. Emlet	Glassell No. 9	10-20-15	2312	S.W. Abd.
J. O. A. Carpter Tr.	Hammock No. 2	34-18-16	920	Dry, abnd.
The Texas Co.	Caddo Sch. Bd No. 2	16-15-12	859	Dry, abnd.

Bossier Parish—Princeton Dist.

Big Ben Oil Co.	A. Stewart No. 2	15-18-12	1300	Dry, abnd.
F. M. Hood	Meyer No. 1	30-16-11	2453	2½M gas
C. W. Jones	McDade No. 1	31-16-11	2536	Salt water

Red River Parish

Odell and Lawton	Richardson No. 4	23-13-11	2556	15 bbls. oil

Sabine Parish

R. L. Gay Tr.	Sabine Lbr. Co. No. 1	15-7-14	2936	Dry, abnd.

Morehouse Parish

Woodley and Collins.	Harp No. 1	22-22-7E	3065	Salt water, abd.

Ouachita Parish

Magnolia Pet. Co.	Fee No. 1	14-18-4E	2220	2¼M gas
Maury Drlg. Co.	McEwen No. 1	29-19-4E	2196	3½M gas
Nemours Corp.	Frierson No. 2	18-19-4E	2192	4M gas

Texas

Harrison County

C. H. Lyons et al.	State Line Furrh, No. 1, Joel Lipscomb HRS		2366	2M gas

Panola County

Nat. Gas Prod. Co.	Floyd No. 4 B. C.	Jordan HRS	946	2M gas.

Arkansas

Ouachita County

Charles McDonald.	Wilson No. 2	25-15-18	2906	S.W. and abnd.

Union County—Calion

Magnolia Pet. Co.	Kelly No. 1	9-17-14	2822	3M gas
J. W. Olvey	Cottrell No. 1	22-19-17	3503	Dry, abnd.
J. C. Marcum	DeYanbert No. 1	5-19-4	3312	Jckd-Abnd.

Seminole Production Summary

(By Telegraph)

Field	May 11 Wells	May 11 Barrels	May 4 Wells	May 4 Barrels
Little River	333	76,555	334	78,912
Bowlegs	306	35,633	306	34,979
Earlsboro	307	62,945	306	62,973
Seminole City	276	32,991	276	34,735
Searight	73	12,733	73	11,446
Carr City	36	14,572	33	14,395
Maud	115	12,148	112	13,512
Mission	108	36,527	103	35,354
St. Louis	352	94,318	349	102,354
Grand Total	1,906	378,442	1,892	388,660

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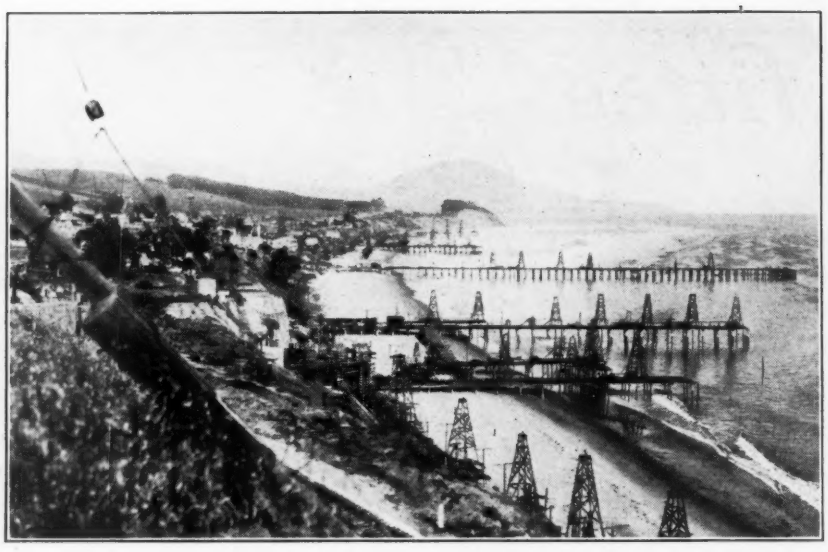

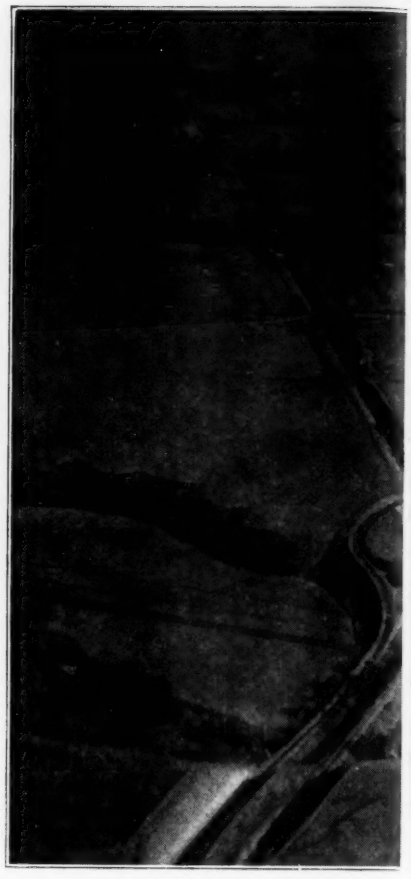

Oil Loaded Direct From Field to Tanker

By Paul Wagner, *N. P. N. Staff Writer*

LOS ANGELES

HISTORY records a few wildcat oil discoveries adjacent to railroads, where the building of tank car loading racks provided immediate outlets for crude in the absence of pipelines; it remained for the Elwood Terrace field of California, however, to be found under similar conditions affecting ocean transportation.

Fully 40 per cent of the subsurface structure from which the Elwood field produces lies under the tidelands of the Pacific shore, west of Santa Barbara about 12 miles and beyond a projection into the ocean known as Campbell's point.

Crude produced from the jointly developed wells of the Rio Grande Oil Co. and the Barnsdall Oil Co. of California is handled direct from lease storage to three big tanks built in connection with an ocean loading terminal, thence it is loaded into the largest of sea-going tankers in a maximum of 12 hours.

Besides flow tanks at the wells it has been necessary to build only three steel reservoirs at the ocean terminal on the property. Two are of 86,000 barrels capacity each and the other holds 118,000 barrels of crude.

The terminal tanks are connected with a 10-inch pipeline extending 3100 feet out to sea. At the loading buoy, on the ocean end of the pipeline, 800 feet of flexible metallic hose is used for transferring crude into tank ships.

Sea-loading facilities are similar to those built in the southern part of the Tampico, Mexico, district, with the dissimilarity there that terminals were also connected to land pipelines serving fields 15 to 20 miles away.

In the Maracaibo lake district of Venezuela it has been impossible to load ocean-going tankers under similar conditions because only shallow draft boats can move through the "bottle neck" between the lake and the ocean.

When facilities have been completed for handling tanker shipments inland to the Rio Grande refinery at Vinvale, in the Los Angeles Basin district, other means of crude transportation than ocean movements will be abandoned. At present, some oil moves to Vinvale in railroad tank cars because unloading facilities have not been completed connecting the plant with Los Angeles harbor facilities.

Because of owned or purchased crude available in the Los Angeles Basin, adjacent to the Rio Grande plant, considerable of the Elwood daily production is sold to others by the joint owners of the field. Rio Grande controls disposition of the crude under its operating contract with Barnsdall, giving it a call on all Elwood production at such time as refinery needs may require it.

Under present prorating practice in California the Elwood field is allowed 20,000 barrels daily production compared with recent exploitation varying from 24,000 to 27,000 barrels daily. The six wells producing in the field had combined initial production of 27,865 barrels daily and are still capable of making approximately that quantity of oil.

Declines have not been appreciable in any of the wells since the drilling-in of the discovery completion, No. 1 Luton-Bell, July 26, 1928. That well, which made approximately 2500 barrels daily of 38.5 A.P.I. gravity oil at 3215 feet, is rated good for its initial flow after nine months.

Three other wells on the Luton-Bell property were good, together, for 15,365 barrels daily. On the Doty property, which adjoins the Luton-Bell on the east, the No. 1 and No. 2 wells came in, respectively, for 4800 and 4200 barrels each.

Some of the wells had been cut back to maintain reservoir pressures prior to the adoption of California prorating, April 22, since which time production has been further reduced. Casing pressures have shown no decline, according to Charles S. Jones, vice president and general manager of the Rio Grande, frequently running up nearly to 1200 pounds to the square inch when not kept down under control measures.

Wells drilled on the property have been taking in progressively greater

Above—The 880 acres of leaseholds belonging to Rio Grande Oil Co. and Barnsdall Oil Co. of California in the Elwood Terrace field are shown in this picture. Property lines extend from the creek in the lower left foreground upward past the tanks adjacent to the highway; thence to the right of the highway to the most distant of three parallel lines of trees; thence across the picture along this line to a topographic depression at the right of the trees, where the boundary line cuts downward again in the picture to the Pacific shore, near the point where development has been most active. In the background, above and to the right of the Rio Grande-Barnsdall properties, are The Texas Co.'s Bishop lease and a 14-acre tract of the Cody Oil Co.

Upper left—Summerland, California, where shallow oil fields have produced on Pacific tidelands for years. All wells in the field yield about 120 barrels daily

thickness of oil sand from time to time. It is estimated by Mr. Jones that the pay will approximate 400 feet in thickness when averaged for the entire structure. In the mountains inland from the Elwood Terrace, a total thickness of 700 feet of this sand series has been measured at the outcrop.

The major structural feature of the field is a completely folded, and possibly faulted, east-west trending anticline with steep dips on both flanks[1]. Wells start in the Monterey shale and obtain production in the Vaqueros sandstone, a horizon that is stratigraphically below most of the important oil producing horizons of California.

Of the 880 acres held under joint lease by the Rio Grande and Barnsdall companies it is estimated fully 550 acres will be found productive, based on geological data disclosed by drilling. It is now believed the field will be confined to the shore area controlled by the two companies, plus about 300 acres of tidelands that may not have to be drilled.

It is the belief of the operating companies that satisfactory drainage can be effected from shore wells in case the Supreme Court of the United States invalidates permits to tidelands issued by the state of California and now under contest. The Rio Grande-Barnsdall companies own five out of the seven such permits skirting the area of shore development.

The court contest developed through the state issuing permits under a grant of the lands from the federal government for specified purposes, which did not, however, include mineral or oil recovery.

Structural conditions of the area have been measured sufficiently that it is believed, barring the confirmation of permit values, that the Elwood productive area will be confined to Rio Grande-Barnsdall properties. In the case of the confirming of tideland permits, two such properties will be in the hands of others.

The only development in the ocean along the Pacific shore has been at Summerland, east of Santa Barbara, where shallow production was found in shallow wells drilled years ago. Summerland operators got permits from the incorporated town of that name, at a time when there was no state legislation affecting tidelands. As daily yields were never large no question ever arose over development. Summerland production now averages about 120 barrels daily from all wells.

Summerland producing horizons are at extremely shallow depth as compared with the 3200-3300-foot level of the Elwood field pay. Elwood drilling entails none of the problems of deep fields on the Pacific Coast. Wells have been actually put down in nine days' drilling time and the field discovery was completed in only three weeks. Only one casing string is required in addition to the surface conductor pipe.

Wells are choked, or "beaned" down to control them against water dangers, none of which have appeared as yet. Gas production approximates 2,000,000 cubic feet daily per well, or an oil/gas ratio of about 430 cubic feet to the barrel of oil, on original completion.

1—D. B. Myers, chief geologist, Union Oil Co. of California; paper before Southern California section, American Institute of Mining & Metallurgical Engineers, Jan. 10, 1929

Rocky Mountain Operators and Contractors find it pays to use the Rotary and ~

The above photograph was made at the Texas Production Company's Well No. 11, Knowlton Lease, Craig, Colorado. G. H. Vaughn Drilling Company, Contractors. Depth of hole—4343 feet—of which 4163 feet was made with 31 sets of Hughes Self-Cleaning Cones.

Actual drilling time—47 days.

This record was made in temperatures ranging from 20° to 50° below zero.

Shown in the picture are: B. Johnson, Roy Bodkins, J. F. Ellis, E. R. Skinner, P. H. Vaughn, J. C. Crane, J. A. May, Geo. Junes, and T. G. Maxwell.

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Oil Field Emulsions

Methods and Equipment Used In Breaking Down Emulsions

Article Three

By Lester C. Uren

Professor of Petroleum Engineering, University of California, Berkeley, Calif.

PREVIOUS articles of this series, reviewing the technology of petroleum emulsions, described their physical and chemical properties, discussed the various theories that have been offered in explanation of their formation and stability, outlined the economic aspects of the oil-field emulsion problem, and suggested operating methods which should result in a minimum amount of emulsion being formed.

This, and the concluding article of the series, will be devoted to a brief description of methods and equipment used by oil producers in dehydrating crude petroleum emulsions.

Classification of Dehydrating Methods

Methods employed in dehydrating crude petroleum emulsions may be classified into six groups, as follows: (1) gravity settling; (2) heat treatment methods; (3) electrical methods; (4) chemical treatment methods: (5) centrifugal methods; and (6) filtration methods.

Of these six different methods of treatment, the first four found extensive application in the American petroleum industry; the fifth has received a thorough test in many field installations, but is less used comparatively than the first four methods. The sixth method has been thus far employed to but a limited extent, and chiefly in experimental tests rather than under routine operating plant conditions.

Each of these different methods constitutes in itself, under favorable conditions, a means of securing reasonably complete separation of water from emulsified oil, but in many field dehydrating plants, two or more different processes of the group are employed simultaneously or consecutively, producing a result that, under the conditions prevailing, is cheaper or superior to that of either acting alone.

Gravity Settling

If crude petroleum contains water in emulsified form, a certain amount will often settle out on prolonged standing, by reason of superior gravitational attraction on water. There is nearly always a considerable difference in density between the two fluids comprising the emulsion, with consequent tendency of the heavier of the two constituents to gradually settle out to the bottom of the container.

This separation will usually be slow and incomplete, and in the case of thoroughly emulsified water, will perhaps, merely take the form of concentration of the suspended water droplets, without actual coalescence, still permitting a certain amount of water-free oil to be skimmed off the top of the fluid. The lower layers will be found to contain a higher percentage of water than before gravitational settling occurred.

The rate of gravity settling is influenced to an important degree by the viscosity of the mixture and the gravity of the oil. The concentrated emulsion formed in the bottom of the container by this process, is generally more refractory and resistant to processes capable of effecting complete separation, than the original unsettled emulsion. This is probably because the water droplets are closer together and the separating oil films are thinner.

Gravity settling is often combined with other processes of treatment to accomplish final and complete separation of the two fluids after the emulsion has been "broken" by appropriate means. For example, the chemical process of treatment is effective in bringing about demulsification, but treatment by this method is followed by a period of gravity settling during which the water thus liberated is permitted to settle out, leaving the supernatant oil practically free of water.

Gravity settling is necessarily conducted in a large container, such as a large tank, sump or reservoir in which the fluids may come to rest for a suitable period of time. Tanks are often used for this purpose, though many operators prefer concrete-lined sumps or reservoirs. (See Fig. 1).

"Breaking" of the emulsion is usually accompanied by separation of suspended solids such as finely divided clay, sand and solid hydrocarbons, which settle to the bottom of

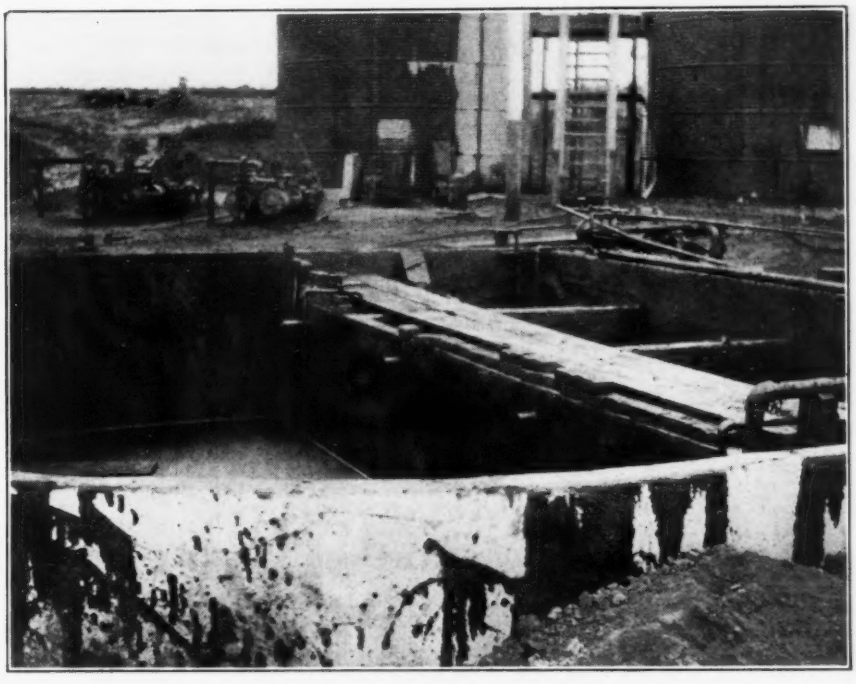

Fig. 1—Concrete partitioned tank for heat treatment and gravity settling of heavy California crude

the container and there accumulate unless the form of the container is such that they may be drained off with the water. Properly designed concrete sumps or tanks often lend themselves better to this purpose than flat-bottomed tanks.

Earthen-lined sumps are sometimes used for storing petroleum emulsions during the settling period in heavy-oil districts, or in cases where there is insufficient time for the provision of more permanent containers, but are not recommended if other containers can be made available, because of seepage and evaporation losses, and because of the tendency of oil stored in them to accumulate foreign impurities. Residue emulsions that have been stored for a prolonged period in earthen-lined reservoirs are among the most difficult to dehydrate by any process.

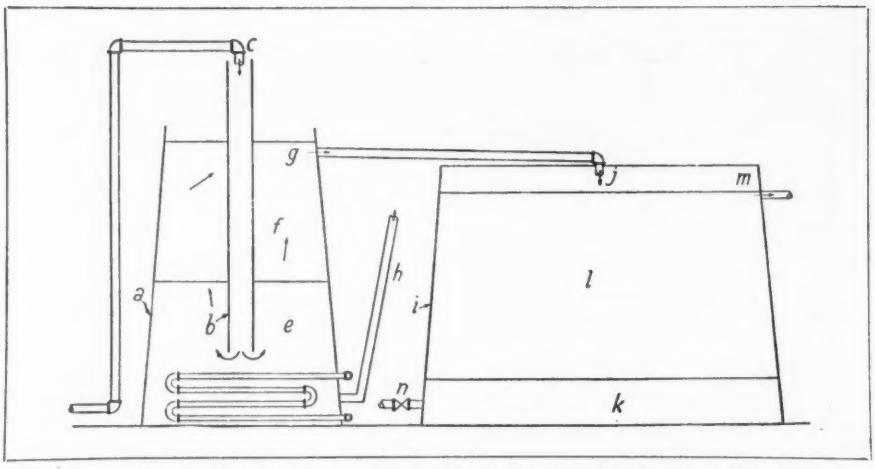

Fig. 2—A simple type of equipment for heat treatment of water-oil mixtures. (After D. B. Dow, U. S. Bureau of Mines Bulletin 250)

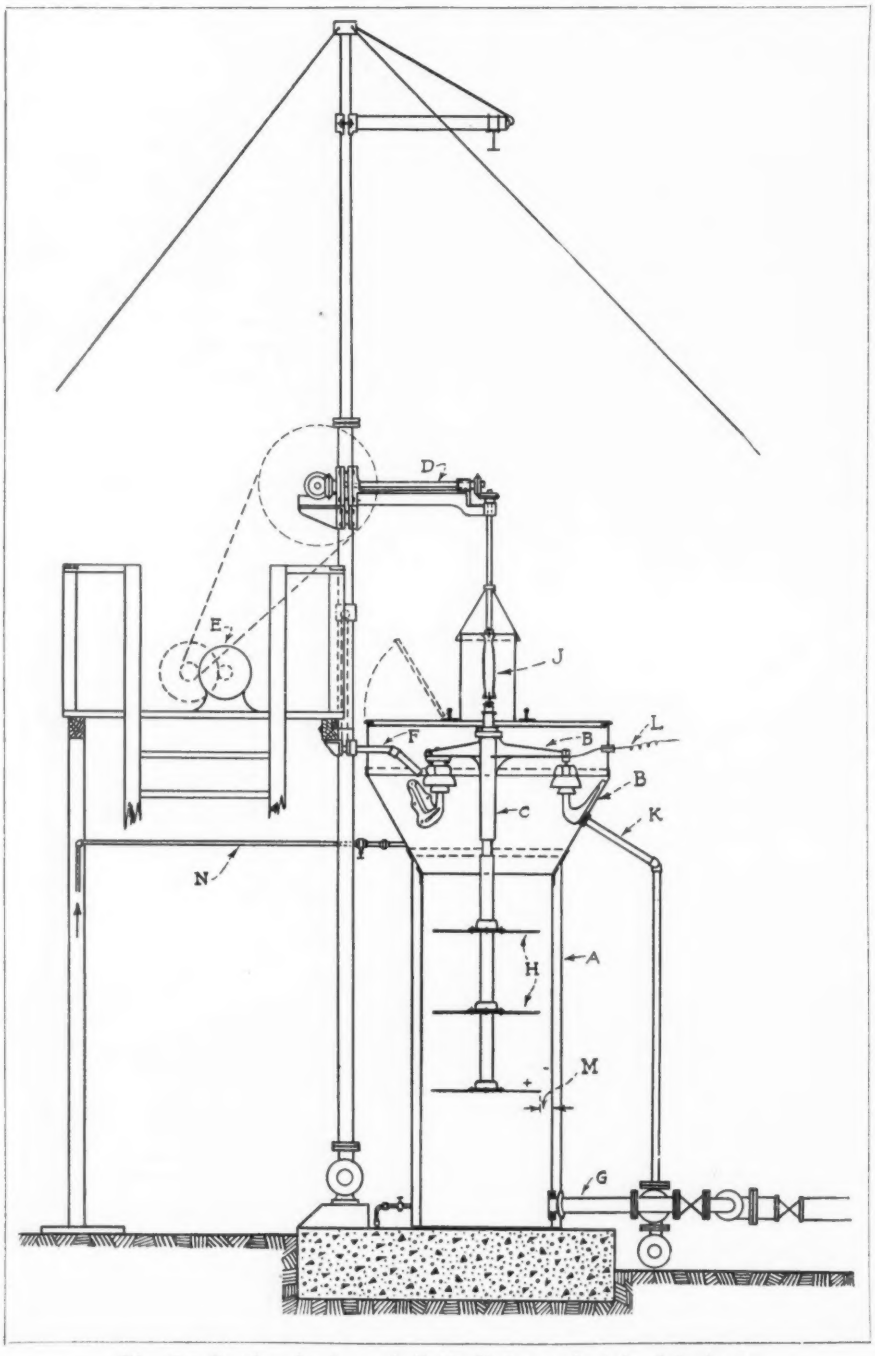

Fig. 3—Sectional view of Cottrell type electric dehydrator

Heat Treatment Methods

Application of heat to petroleum emulsions is often an effective means of accomplishing their dehydration, and is in many instances used to assist in other processes. Heat aids in bringing about separation of water from petroleum emulsions in three ways: first, by reducing the viscosity of the oil so that gravity may more readily operate in settling out the denser water; second, by effecting change in the interfacial tension relationships and colloidal properties of the emulsifying agent; and third, if the temperature is carried high enough, by actually bringing about a change from the liquid to the gaseous state, the steam so formed bursting the enclosing oil films about the water droplets.

Heat treatment methods have been widely used in the treatment of emulsions in the oil fields and are familiar to most oil producers, so that they will not be described at length here.

Application of heat is accomplished in either of several ways: by passing the emulsion through a layer of hot water, by direct injection of steam or hot compressed air, or by direct heating of the emulsion in a pipe still, tubular boiler or other type of furnace, or by indirect heating in a steam-heated heat exchanger. Hot water treatment is the most commonly used heat-treatment method.

A simple type of apparatus widely used in heating emulsions, has been described by Dow[1] and is illustrated in Figure 2 herewith. Oil and water enter "gun-barrel" tank "a" through stand-pipe "c," flow downward to "b" and are discharged through water "e," which is heated by a steam coil.

1 Dow, D. B., "Oil-Field Emulsions," U. S. Bureau of Mines, Bulletin 250.

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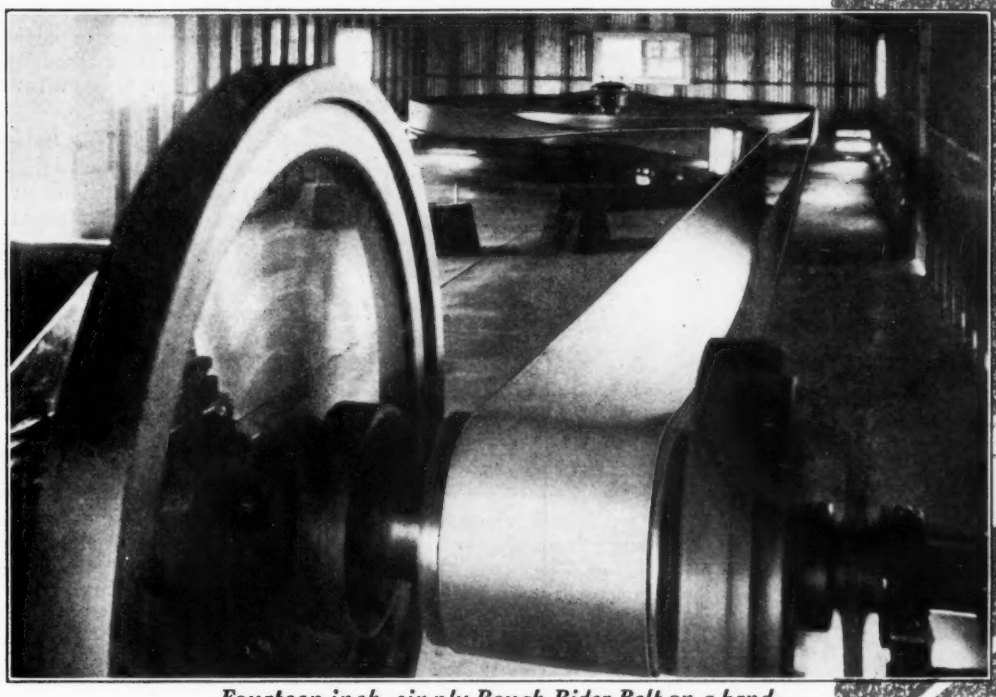

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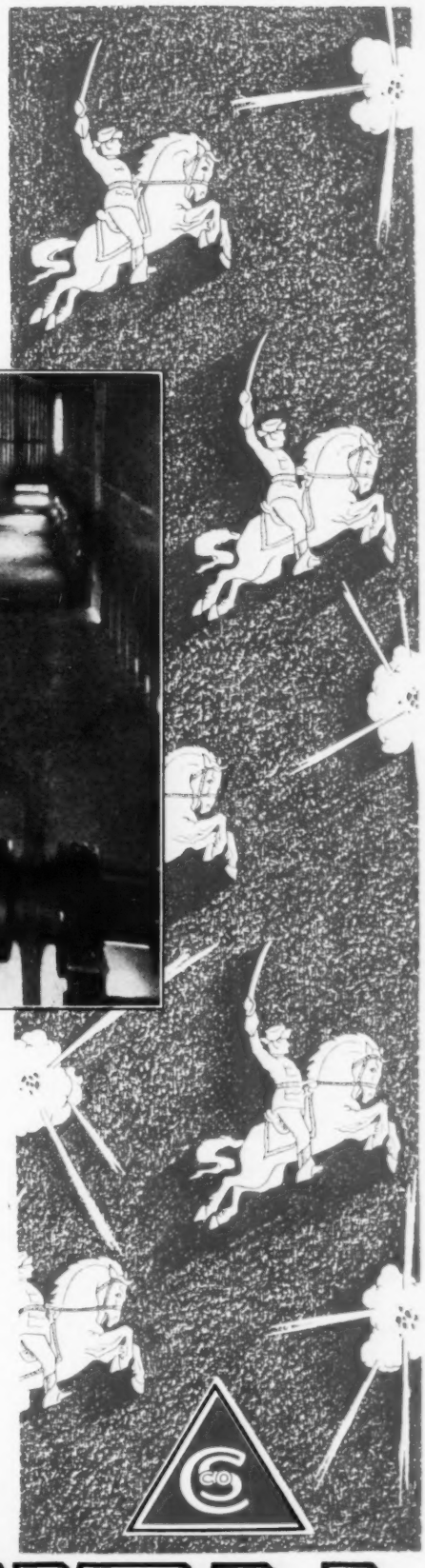

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Oil collects above the water at "f" and overflows through line "g," discharging at "j" into settling tank "i." Water-free oil is skimmed from tank "i" at "m," and water "e" and "k," accumulating in the bottoms of the two tanks, is continually or periodically drained off at "h" and "n."

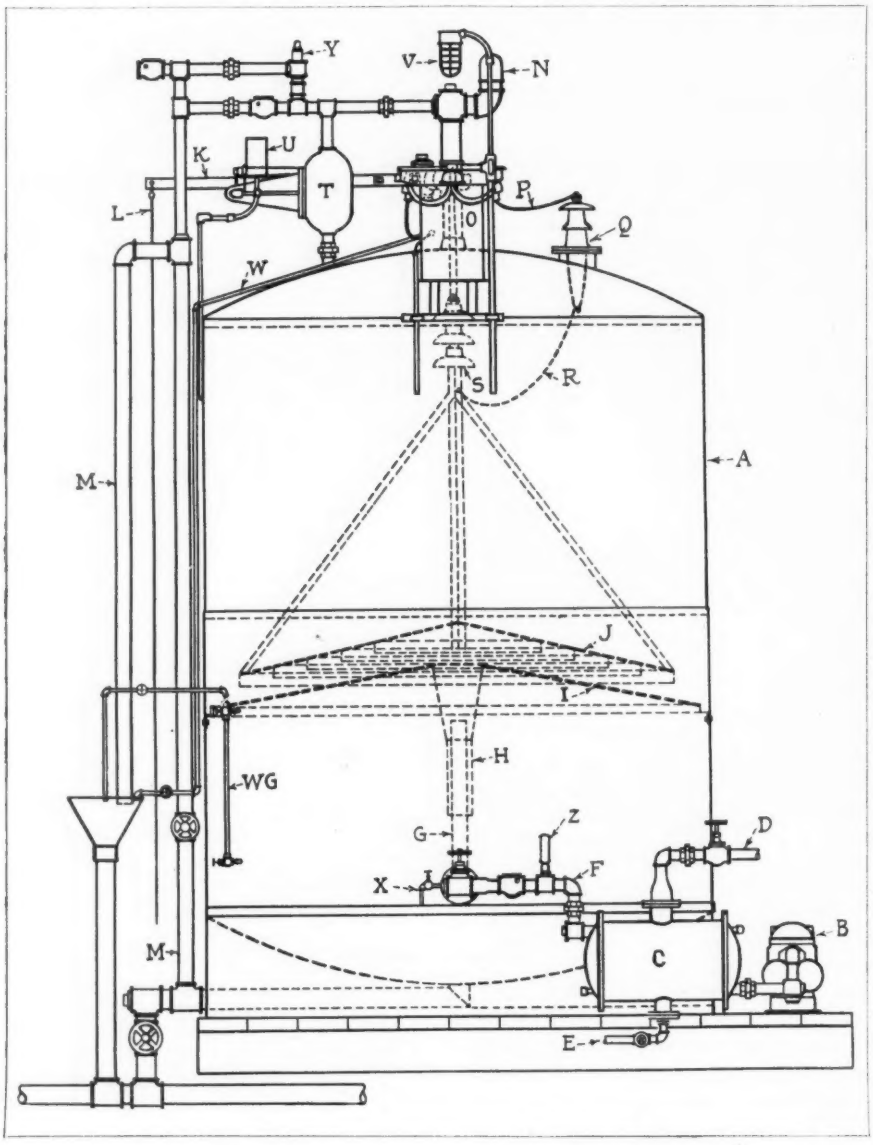


Fig. 4—Elevation of "H. F." type electric dehydrator

In one installation of this character, the treatment tank is cylindrical in form, 8 feet in diameter and 20 feet high. The oil is admitted to the tank through ⅛-inch holes bored in a series of distributing pipes so arranged as to give a fairly uniform distribution of oil across the entire tank cross-section. The steam coil is made up of about 500 feet of 2-inch pipe and is submerged in 10 feet of water maintained at a temperature of 150 to 200 degrees F.

The water globules detach themselves from the oil in rising through the hot-water layer, aided by the greater relative expansion of the oil under the influence of heat, and remain behind as an addition to the water layer in the tank. It is important in the design of such a tank that the steam coil does not come into direct contact with the oil, otherwise it will become coated with a deposit of solid hydrocarbon, thus reducing its efficiency as a heating device.

The water layer in the tank tends to accumulate salt from the brine which accompanies the oil. Some operators report improved results through keeping the water in the tank fairly fresh, adding water from an outside source from time to time to displace the accumulated brine.

The capacity of such a dehydrating unit will be variable, depending upon the characteristics of the oil under treatment and the condition of the water in it, but would be at least 500 barrels per day, even under unfavorable circumstances. The method is continuous and once the valve controls have been properly adjusted, the equipment requires but little attention. Exhaust steam from some near-by power plant may often be used for heating purposes.[2]

Heat-treatment methods are not usually effective in completely demulsifying petroleum emulsions, except in the case of unstable or only partially emulsified mixtures, unless temperatures approaching or exceeding the boiling point of water are used. Evaporation losses of oil from heated emulsions constitute an important disadvantage of this method, particularly where high temperatures are necessary.

Wiggins reports the results of tests on oil losses due to evaporation in heat treatment of emulsions produced in the Eldorado field of Kansas.[3] The oil here produced is of 37.5 degrees A.P.I., and yields approximately 30 per cent of gasoline. Evaporation losses range from 1.75 per cent at 84 degrees F. to as much as 6.7 per cent at 150 degrees F. Corresponding losses in A.P.I. gravity ranging from 0.65 to 1.99 are also noted.

Though quantitatively small, when it is remembered that these losses represent a direct reduction in the gasoline content of the oil, it is realized that they are economically important. Such losses may be greatly reduced, or even entirely prevented, by conducting the heating process in a closed container, such as a tubular heat exchanger, or by passing the vapors escaping from the tank or other receptacle in which the emulsion is heated, through a suitable condenser.

Electrical Dehydration of Petroleum Emulsions

When brought within the field of influence of a high-potential alternating current, the dispersed water droplets of a petroleum emulsion coalesce to form larger water aggregates which readily settle out from the oil under the influence of gravity. In this process the emulsion is generally heated moderately to reduce viscosity and facilitate settling. A very complete separation of the water and oil is quickly effected at small cost, by this method.

Discovery of the electrical process of dehydration is credited to F. G. Cottrell, who in association with B. Speed, secured patents based on experimental work performed at the University of California. Mr. Cottrell's patents, controlling the use of this process, together with a number of others bearing on the art of electrical demulsification, are now owned

2 Uren, L. C., "Petroleum Production Engineering," p. 496, McGraw-Hill Book Co., New York.

3 Wiggins, J. H., "Evaporation Loss of Petroleum in the Mid-Continent Field," U. S. Bureau of Mines, Bull. 200, pp. 30-41.

by the Petroleum Rectifying Company of California. This company has developed the electrical process to a high degree of efficiency and has perfected apparatus that is widely used in the dehydration of crude petroleum emulsions in many American and foreign fields.

Two radically different types of equipment have been introduced into field practice by the Petroleum Rectifying Co. The first of these, known as the Cottrell type treater, is a development of the apparatus originally designed by Cottrell, though it differs in several details from that specified in the Cottrell patents.

Figure 3 is a vertical section through the Cottrell type treater, showing also the necessary incidental equipment. The treater shell, "A," is cylindrical in form, approximately 10 feet high and 3 feet in diameter, made of sheet steel and provided with an inverted, conically-shaped top of somewhat larger diameter than the lower part of the shell to which it is riveted.

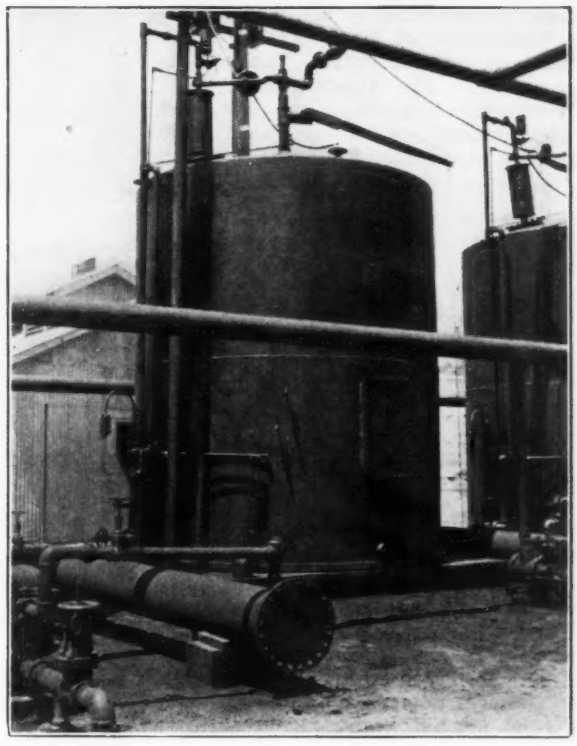


Fig. 5—"H. F." type electric dehydrator, showing tubular preheater

A CAST-IRON spider, "B," supported on insulated brackets attached to the inner walls of the conical portion of the shell, supports a vertical steel shaft, "C," which may be revolved by beveled gearing attached to its upper end where it projects through the cover of the treater shell. Shaft "C" supports three or more horizontally disposed sheet-steel discs "H," which turn with the shaft as it revolves.

The shaft and discs are slowly rotated by motor "E" through intermediate shafting, "D" and gearing of appropriate design. A connecting link, "J" of some non-conducting material, insulates the motor and shafting from the lower part of shaft "C." Emulsion to be treated, previously heated in a separate tank equipped with steam coils, enters the treater near the top, through pipe "F," fills the treater up to the level of over-flow pipe "K," and is drained away through pipe "G" which penetrates the treater shell near the bottom.

Vertical shaft "C," with its revolving discs, is connected through wiring, "L" with a source of alternating current under a voltage of about 11,000 volts. The tank shell is grounded, so that the annular spaces, "M," between the revolving discs and the shell, form an electrostatic field through which the emulsion must pass during its upward flow through the treater.

In this process, the oil is often heated to temperatures approaching or exceeding its flash point, and arcing of the high-potential current above the oil surface sometimes ignites the oil. The semi-circular covers of the treater, normally open, are held so by a chain or wire containing a link of low-fusion metal which melts and permits the covers to close in time of fire.

A steam line, "N," connected with a heating coil within the treater shell, used when necessary to keep the oil hot, also has a low-fusion metal plug which melts in the event a fire occurs, thus discharging live steam into the vapor space above the oil surface. After treatment, the demulsified oil flows to a tank where separation of the oil and water is accomplished by gravity settling.

Many hundreds of treaters of the Cottrell type are in use, notably in the California fields. Plants of two, four, six and eight units are common. One southern California plant—probably the largest of this type yet constructed—has 56 treaters.

Definite economies in construction and operation expense are realized by arranging the treaters in groups of four or more. For example, one motor may operate six treaters. One heating tank and one settling tank may also serve as many as six treaters. Only two attendants are required in operating the 56-unit plant mentioned above.

The capacity of the Cottrell type treater ranges from 200 to 1,000 barrels of demulsified oil per day, depending upon the character of the oil and the temperature to which it is heated. Installation costs vary widely with the cost of transportation and other physical conditions, but approximate $2,400 for the first unit and about $1,100 for each additional unit. Unit costs naturally diminish as the number of units increases, important economies being realized in the cost of transformers, switchboards, housing, tankage, etc.

These figures do not include the cost of boilers for steam supply, it being assumed that exhaust steam from some near-by power plant will be generally available for oil heating and fire protection purposes. It is assumed that electric current may be purchased from outside sources and transformed to the proper voltage.

While many treaters of the Cottrell type are now in use and are giving thoroughly satisfactory service, the Petroleum Rectifying Co. has now discontinued its manufacture and is standardizing on another radically different type known as the "H.F." (horizontal flow) type of treater. Some years ago, the company acquired title to patents controlling the use of what was known as the "National" electric dehydrator—a comparatively little used type of treater.

THE "H.F." treater is said to combine the best features of both the Cottrell and National types. One of the difficulties experienced with the Cottrell type of treater was due to the vapor space above the oil and the semi-open cover construction, which permitted some evaporation loss and resulted in occasional fires. The "H.F." type of treater is completely enclosed and is at all times kept filled with oil, so that all possibility of evaporation loss or fire within the treater is removed.

The latest form of the "H.F." type of treater is illustrated in vertical section in Figure 4. This treater combines treatment and gravity settling of water from the oil in one

tank. Preheating is accomplished in a pipe form of heat exchanger, so that no supplementary tankage is necessary. The treater tank, "A," is cylindrical in form, gas-tight, and large enough to contain about 180 barrels of fluid.

The oil to be treated is forced into the treater with the acid of supply pump "B" through pre-heater "C." Steam enters the pre-heater through pipe "D" and exhausts through "E." The heated emulsion enters the treater tank through pipe "F" and is discharged upward through pipe "G" at the center of the tank, through concentric tube "H."

FLOWING upward through "H," the oil is discharged between the two electrodes, conical in form, the lower of which, "I," is stationary and electrically grounded. The upper electrode, "J," carries a high-potential current and is suspended on a supporting frame in such a way that it may be moved up and down through an interval of several inches with the aid of pivoted beam, "K," which is connected at its outer extremity, by cable "L," with a small motor-actuated crank not shown in the drawing.

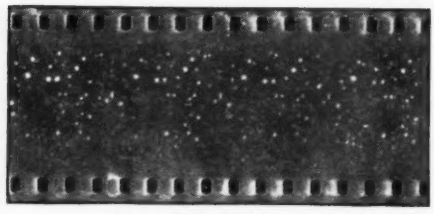
The two electrodes are thus held from 4 to 8 inches apart, the distances between them continually changing as the upper electrode slowly moves up and down. The lower surfaces of the upper cone carry a series of narrow metal strips supported in such a way that their edges project downward.

Emulsion flows downward and outward from the center between the two electrodes, where it is subjected to electrical treatment which frees the water from the emulsifying bonds.

The water settles to the bottom of the tank and is drained off through bleeder-piping "M," which is so disposed as to maintain the treater at all times filled with fluid.

Oil rises to the top of the fluid in the treater by reason of its lower density, and overflows through pipe "N," to near-by storage tanks, not shown in the drawing. Electric current enters through transformer "O," wire "P," insulating bushing "Q," and flexible conductor "R," which is attached to the frame supporting the upper electrode. The latter is insulated from the tank and external equipment by insulators, "S," which form a part of the electrode suspension mechanism.

A liquid level-regulator, "T," is so connected with a safety switch, "U," as to shut off the current to the transformer whenever the liquid level in the treater falls below the top. Pilot light, "V," indicates whether or not current is flowing into the treater. A small sampling tube, "W," permits of drawing a sample of treated oil from the oil discharge line,



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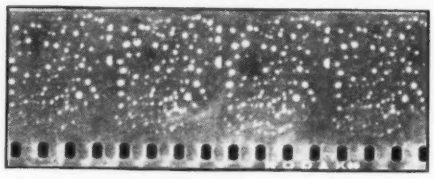
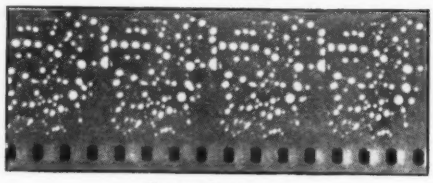


First stage



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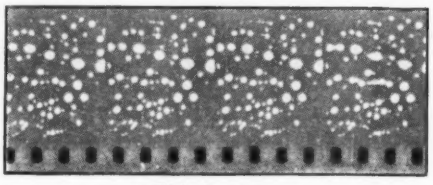

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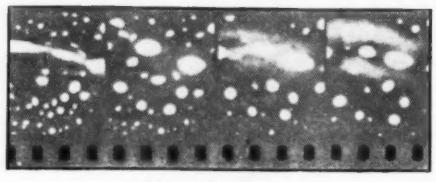

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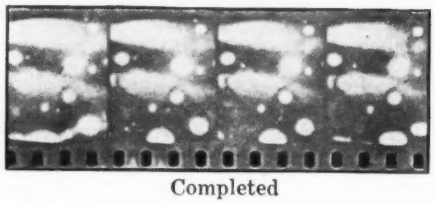

Completed

Fig. 6—Micro-photographs on motion picture film, illustrating various stages of demulsification of petroleum under the influence of high potential electricity. (Courtesy of Petroleum Rectifying Co. of California)

and another valve, "X," provides a means of sampling the incoming fluid.

A pressure-relief valve, "Y," permits the fluid to escape from the treater in case the control valves on the discharge lines are closed. A thermometer, "Z," in the oil inlet piping, indicates the temperature of the oil flowing from the preheater. Check valves are provided on both the inlet and outlet tubing. A glass water-gauge, "WG" indicates the position of the water-oil surface within the treater. The photograph reproduced in Figure 5 is illustrative of the "H.F." type of treater as installed in a southern California oil field.

The "H.F." type of dehydrator has a capacity of from 1,000 to 4,500 barrels of demulsified oil per day, depending upon the character of the oil. A single treater of this type, with incidental equipment, costs about $3,000 exclusive of steam raising equipment. Operating costs, exclusive of depreciation, on a one unit plant in the Long Beach field of California, having a capacity of 1,200 barrels per day, are said to be 5.4 cents per barrel of clean oil produced. This figure includes labor, 2 cents; royalty, 1.4 cents, and fuel and electric power, 2.0 cents.

An eight unit plant operating in the Luling field of Texas, is said to operate at a cost of only 1.2 cents per barrel of oil demulsified, exclusive of royalty and depreciation. This plant is operating on a daily throughput of 10,500 barrels of 28 degrees A.P.I. crude, carrying in excess of 20 per cent of emulsified water. After treatment, the oil contains less than ¾ of 1 per cent of sediment and water.

In this plant the emulsion is treated after heating by steaming at a temperature of 165 degrees F. In the Hull field of Texas, a 24 degree A.P.I. emulsion of oil with 25 per cent of water is dehydrated to less than 0.75 per cent water with "H.F." treaters, after heating to only 120 degrees F. Some oils can be efficiently demulsified at normal temperatures without preheating.

The manufacturers of the "H.F." treater state that the total cost of electric dehydrating, including steam, electricity, labor, royalty, repairs, interest and depreciation, ranges from one to three cents per barrel of demulsified oil. This depends to an important degree however, as the field costs quoted above will show, on the size of the plant and the character of the oil treated.

THE royalty charge ranges from $0.005 to $0.02 per barrel of recovered oil, depending upon the plant capacity. Maintenance and depreciation are ordinarily very small items when reduced to the unit basis. The labor cost is ordinarily less than $0.02 per barrel—in large plants, much less.

The electric power consumption is small, ranging from 25 to 75 watt-hours per barrel of clean oil produced. If electricity can be purchased for from one to five cents per kilowatt-hour, from 10 to 25 barrels of oil may be treated for one cent.

The small amount of electrical energy used in the electric demulsification process, is explained by Messrs. W. G. and H. C. Eddy[4] on the theory

4 Eddy, W. G. and H. C., Journal of Industrial and Engineering Chemistry, Vol. 13, pp. 1008, 1017. (Part of a symposium on emulsification).

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that the water droplets within the electric field between the electrodes, act as a multitude of series condensers, rather than as conducting paths, the minute water particles being the electrodes or poles on the condensers, while the separating oils act as the dielectric which is ruptured by the high voltage.

The action of electricity in bringing about coalescence of the water droplets may be observed under the microscope. Figure 6 presents a series of micro-photographs on motion-picture film, showing the appearance of a typical crude petroleum emulsion in successive stages of treatment. Each of the six strips of film contains four individual photographs, exposed at the rate of four per second.

Microscopic studies have shown that the water globules tend to form chains along the electrostatic lines of force connecting the electrodes. Apparently when such a chain forms, electric current punctures the separating oil films, permitting the water globules to coalesce. If the electrodes remain stationary, connecting channels of water may form, permitting short-circuiting of the current.

While some oils have been satisfactorily handled between stationary electrodes, in most cases it is desirable to have one of the electrodes in motion to prevent short-circuiting of this character. It will be noted that this is an important feature of both the Cottrell and "H.F." types of treaters. In an earlier type of electric treater, the same effect was realized between stationary electrodes by external apparatus providing a periodic make-and-break in the electrical circuit.

Though the electrical method of dehydration has found its chief field of application in the California and Gulf Coast fields, successful installations are in operation in the Midcontinent and several foreign fields. Proponents of the electrical method claim that it is universally applicable to all oils of whatever type.

The method undoubtedly has a wide range of application, possibly more so than any other method. Some emulsions however, respond more satisfactorily to this process of treatment than others, but where unsatisfactory results with electrical equipment have been reported, the difficulty has probably been due in large part, to faulty adjustment of the apparatus or control of operating conditions.

Summary

In this, the third article of a series reviewing recent progress in the technology of crude petroleum emulsions, a general classification of dehydrating methods has been offered and three of the six important methods of demulsification have been briefly described. The next and concluding article of the series, which will appear in an early issue of NATIONAL PETROLEUM NEWS, will be devoted to a discussion of the three remaining methods—particularly, the chemical, centrifugal and filtration methods—and to a comparison of the several methods.

Oil and Water Separator Devised by Skelly Men

TULSA

A NEW oil and water separator, based on the experiment and practice of other operators in the West Texas fields has been devised by Skelly Oil Co. production men. The device is easily and quickly put together, requiring little labor in its construction, and therefore having an extremely high salvage factor.

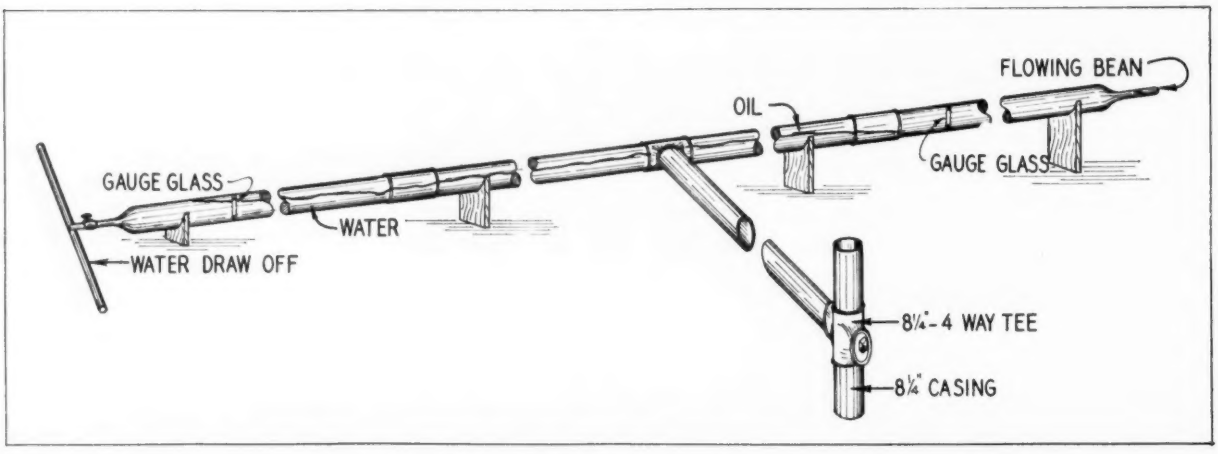
Due to the high pressures encountered in operating the West Texas production, high-pressure fittings must be used. This runs the price up to more than such a device might be expected to cost for Mid-Continent use. About $500 per well will provide all fittings, labor, and put the separator in action. So efficient is it that the oil is run directly to the stock tanks, no other separators or treating plants being needed.

As shown in the accompanying illustration, which is drawn looking down on the device from, say the derrick floor, the oil and water from the well are run together to the separator. An 8¼-inch 4-way tee is made up on the casing above the "Christmas tree" through which the well is produced. Two joints of 12½-inch carry the oil from the well head to the separator, which is itself made out of five joints of 12½-inch.

The separator rests on timber supports, which hold it on an incline. The end from which the oil is taken is about 12 inches higher than the water end. A 4-inch Shaffer flowing bean is welded on the upper end. The oil is forced through it to the stock tanks by the pressure in the separator. The pressure in the separator is supplied by the well pressure itself.

The water is drawn off the lower end, experience having taught the operators how much to crack the water outlet to keep the water drawn off without taking any of the oil. It is a peculiarity of the production that the oil and water separate cleanly and quickly, without enough emulsion to require any treating other than a settling tank, which is what the separator really provides.

Glass fluid gages are provided, generally using about three to the unit. These gages are welded into the separator at such an angle that when it is inclined on the supports, the gages are vertical. A glance at the gages shows the relative amounts of oil and water in the separator. The gage on the lowest end shows all water, the middle gage shows about 50-50 oil and water, and the top gage shows all oil when the oil and water are both being removed at the proper rate. The device is not patented.



Oil and water separator designed by Skelly Oil Co. production men for use in West Texas

Gravity Is Only Force Which Makes Vertical Holes Possible

LOS ANGELES

WORDS need not be wasted in discussing the importance of drilling vertical holes, according to H. H. Jones, assistant general superintendent of the Continental Oil Co., at Los Angeles.

There may be some who may doubt that holes have been drilled at angles of 65 degrees from vertical, he says, but they will learn that it is a fact.

In a discussion at the Pacific Coast regional meeting of the American Petroleum Institute division of Development and Production Engineering, April 30, Mr. Jones made the point that "there is only one thing that can drill a vertical hole and that is the force of gravity."

Mr. Jones made the point that "you cannot hold the drill stem straight, you must let it hang straight."

Continuing, he said:

"Years ago the rotary used lap welded steam pipe for drill pipe and a little later line pipe, with almost no drill collar, but with fishtail bits.

"Then came the upset seamless drill pipe and its improvements as time went on; also the improvements in machinery and power. I suspect that some of those earlier holes were straighter and more nearly vertical than more recent ones, for the reason that the pipe was not strong enough to stand much abuse and the drillers had to hold it up in order to drill.

"Lately much attention has been given to inventing devices to hold the drill so that it will go straight. The components of gravity alone will draw the bit vertically. We want the holes straight, but above all we want them vertical."

There are numerous reasons why holes are not vertical, among which are the following causes mentioned by Mr. Jones:

The excessive weight placed on the bit.

The running of dull bits.

The running of multiple blade bits requiring more pressure to take them out.

The washing away of the soft side of the hole by angular slush jets, and,

The forcing down of dull core bits and, finally, the fact that a hole once crooked has a tendency to become more crooked under present practice.

To his mind, said Mr. Jones, "the problem is very simple. Here is the solution: A very long, heavy drill collar should be used to concentrate the weight at the bottom of the string, so that the gravity pull downward will hold it vertical. * * *

"The slush holes should point straight down the middle of the blade. The body should not be much larger than the drill collar. The cutting blades should be the widest part of the bit and both the bottom edge and the side edge should be comparatively sharp; the side edge about eight inches long (in the case of fishtail bits), faced with the best possible hard metal, ground to an actual edge.

"Theoretically, the drill pipe should be considered only as a means of raising and lowering and rotating the collar and drill. * * *

"It is a demonstrated fact that most of the holes begin to get crooked at about 2000 feet and gradually become more crooked the farther they progress. The first 2000 feet is comparatively straight because it is a large hole and the driller has to hold up the string in order to turn the drill; and the bits have a chance to recover vertical direction after being thrown off by a boulder; also the upper formations are usually easier to drill so far as softness and looseness are concerned. * * *"

No reamer, guide or device, Mr. Jones feels, can make a vertical hole unless it permits gravity to act.

The driller will have to use his brains, says Mr. Jones, assisted by modern weight indicating devices and the proper tools in the well. Speed in hole making will have to be placed secondary to vertical hole. If holes are drilled vertical and straight, though it takes longer, the results will warrant the delay many times over.

The observations of Mr. Jones were made after the presentation of papers by Martin Van Couvering, Los Angeles geologist and engineer, and R. D. Elliott, manager of the Oil Field Service Co.

Mr. Van Couvering said that "if every well survey which has been already made could be supplemented with a reliable record of the amount of weight carried on the drilling bit, the speed of rotation, the rate of circulation of the drilling mud, the types of bits used and the footage made by each bit, the size of the drill pipe, the length of the drill stem, the presence or absence of reamers behind the bit, the type of power used and related information, there is little doubt that the principal causes of our trouble could be quite accurately judged, if not conclusively proved."

Ralph H. Kinsloe of Dallas, was elected a vice president of the Magnolia Petroleum Co. by the board of directors at the annual meeting recently. Previously the stockholders had made him a director.

AFTER reviewing usual methods of starting tests. Mr. Elliott said straight holes have been drilled with every type of bit. He made the point of general agreement on two principles, (1)—that a sharp bit makes a straighter hole than a dull bit and (2)—a large amount of wearing surface on the sides is an aid to drilling straight holes.

General agreement among operators was brought out on the subject of excessive pressure on the bit causing deviation from vertical of holes drilled.

A. C. (Cy) Rubel, chief production engineer of the Union Oil Co. of California, who presided at the meeting, was reelected chairman of the Pacific Coast district of the A.P.I. engineering division.

Other officers reelected were W. W. Copp, vice chairman; Martin Van Couvering, secretary; and W. F. Huff, treasurer.

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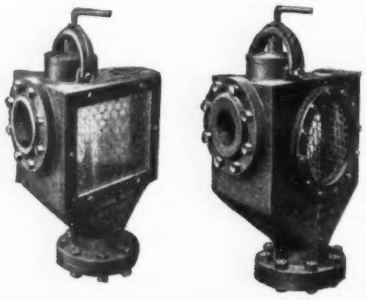


Safety Banquet Is Held by Seminole Field Foremen

Grouped about S. F. Shaw (dark suit and hat) are some of the air-gas lift division employes of the Carter Oil Co. in the Seminole area. Mr. Shaw, whose early articles on the introduction of compressed air or gas into wells as a productive agent first appeared in NATIONAL PETROLEUM NEWS, *is regarded by many as the "father" of the gas lift. From left to right the men are: Rowdy Robson, Fred Knight, Paul Lambright, S. F. Shaw, Ray Kellar, Clyde Stone, Joe Aud and Jim O'Donnell*

TULSA, May 13

A PETROLEUM Safety banquet, sponsored by the Safety Section of the Mid-Continent Oil & Gas Association, was held in Shawnee, Okla., the evening of May 6. Some 400 superintendents, foremen, gang pushers, etc., were present, the attendance being limited to men in authority to a greater or less degree.

J. Burr Gibbons, former general manager of the International Petroleum Exposition, and now vice-president of the Oil Well Improvements Company, acted as toastmaster. The time following the banquet was given over to practical talks on safety and its application in the oil fields.

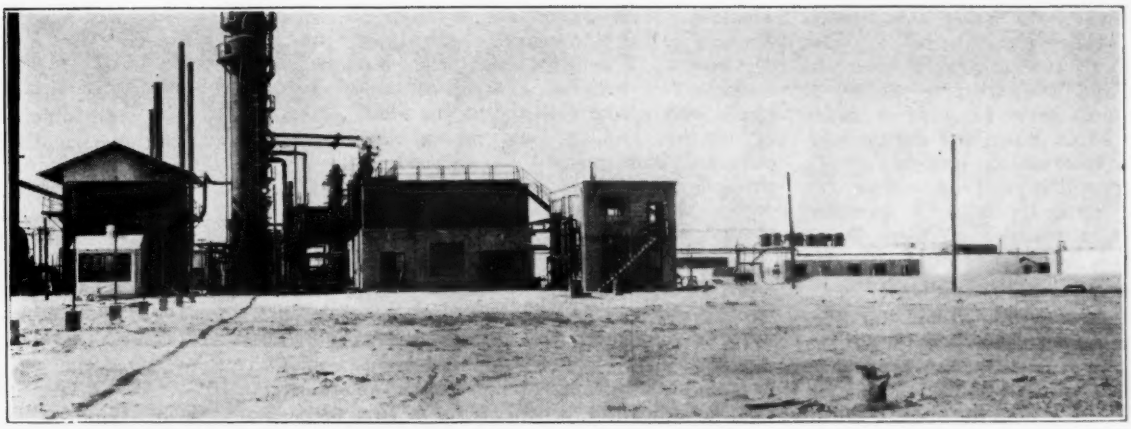
H. N. Blakslee, petroleum representative of the National Safety Council, Chicago, spoke on "Accident Prevention in the Producing Fields." Elmo D. Murphy, chairman of the Mid-Continent Division of the National Safety Council, had as his subject the "Theory and Application of Safety." "Responsibilities in Foremanship" were discussed by D. J. Wallace, safety director of the Mid-Continent Oil & Gas Association.

F. W. "Rowdy" Robson, division production engineer of the Carter Oil Co., read a paper on the "Safe Operation of Air and Gas Lift Plants." Having been stationed in the Seminole district since the inception of the field, which saw the first application of the air-gas lift on a big scale, Mr. Robson was well qualified to handle his subject from all angles. His paper will be republished later in NATIONAL PETROLEUM NEWS.

Studies Oil Mining

WASHINGTON, May 10.—The recovery of the approximately 80 per cent of the oil left in the ground in petroleum production operations constitutes one of the greatest challenges of mining engineering, says George S. Rice, chief mining engineer, U. S. Bureau of Mines. Suggestions as to possible application in the United States oil industry of the methods employed in the actual mining of oil sands at Pechelbronn in Alsace, France, and Wietze, near Hanover, Germany, were advanced by Mr. Rice in the presentation of a paper on oil-sand mining at a recent meeting of the Engineers' Society of Western Pennsylvania.

Mr. Rice has observed at first hand the methods employed in mining oil sands in the districts named. He proposes important modifications of the methods to lessen the cost of producing the oil, although he pointed out that the invested capital must be large to effect economies and to provide safety, since dangerous gases must be encountered.



The pipe still, bubble tower and condenser that make up the primary distillation equipment at the Burford Oil Co. plant

West Texas

New Burford Refinery at Pecos One of Most Modern in Field

By Paul Truesdell
N. P. N. STAFF WRITER

Article 3

CLEVELAND

ONE of the newest and most modern of the West Texas refineries is that of the Burford Oil Co. at Pecos, about 225 miles east of El Paso.

This plant, which began operations on Feb. 1 this year, is running about 5000 barrels a day of crude, making gasoline, gas oil and fuel oil. It is operating on crude from the company's own leases in the Winkler county fields, about 36 miles away. The crude is brought to the plant by a pipe line owned jointly by the Burford and Skelly companies.

Like all of the newer West Texas plants, that of the Burford company is simple and contains little equipment when compared with plants of similar capacity but of older type.

The primary distillation equipment consists of one pipe still unit designed and built by the Graver Corp., two Jenkins cracking units and a shell and tower rerun still for the Jenkins pressure distillate. The pipe still, which is rated at 6000 barrels a day of crude, consists of the still proper, a flash tower and a bubble fractionating tower.

When I visited the plant last month, only the pipe still unit was in operation. The two Jenkins units were uncompleted but were expected to be finished June 1.

The cracking units are expected to run about 2000 barrels a day each of gas oil, yielding about 30 per cent of cracked gasoline. They are equipped with Lientz air preheating and flue gas recirculating equipment. The furnaces are of Transite construction.

F. W. Burford is president of the company, J. J. Thomas is vice president in charge of refinery operations and B. D. Dawson is sales manager.

The writer is indebted to Mr. Thomas for the following description of the refinery and its operations.

The Winkler crude which is the raw material used, is of about 28.8 to 29.6 A.P.I. gravity and yields, as handled at this plant, better than 26 per cent of gasoline of below 100 initial boiling point and 400 to 410 end point.

The crude coming into the system passes through two heat exchangers in series, in one of which it strips heat from the gas oil stream and in the other from the residuum stream. From the second heat exchanger the crude heated to about 350 F., is led into the side of the flash tower. Most of the gasoline flashes off at this temperature and is taken off as a very light product overhead.

The topped crude, that part of the oil not vaporized in the flash tower, is pumped continuously through the pipe still where its temperature is raised to about 650 F. and flashed into a combination flash and bubble tower. A heavier gasoline stream is taken off the top of this tower and a gas oil stream off the side.

At present the gravity of the gas oil is about 30 A.P.I. but when the Jenkins units are in operation a deeper cut will be made, bringing the average gravity of the gas oil stream to about 28 A.P.I.

The unvaporized portion of the oil is continuously drawn off from the bottom of the tower as fuel oil.

The Burford is careful about keeping its gasoline below the 0.10 per cent sulfur content prescribed by the government gasoline specifications and strongly urged by the automobile engineers. The gasoline is treated with sulfuric acid, caustic soda, doctor solution and washed with water.

The treating with acid and soda is done in a continuous plant. The acid treat is given in two stages. First, weak acid—20 to 30 Be.—is used. This is followed by a shot of 66-degree acid and this in turn by the caustic neutralization and the water wash.

THE doctor treatment is given in a circulating agitator. The gasoline is pumped into an agitator and the doctor solution added. Then a pump takes suction from the bottom of the agitator and pumps the gasoline-doctor mixture back into the top of the agitator, repeating this operation over and over until very thorough mixing is accomplished.

This method of doctor treating, according to Mr. Thomas, is superior to the continuous system used for the acid and soda treating, because it gives a longer time of intimate contact between the doctor solution and

the gasoline. He holds that unless sufficient time element be afforded for thorough interaction between the gasoline and the treating agent, it may be necessary to add so much sulfur to knock down the doctor solution that the sulfur content of the finished gasoline will be above the tolerance of the U. S. Motor specifications. Other refiners of West Texas crude have found the same thing to be true.

The finished gasoline from the Burford plant not only meets the sulfur specification, according to Mr. Thomas, but also passes the copper strip test for corrosion with flying colors. Copper strips left for hours in samples of Burford gasoline at temperatures of either 110 or 212 F. show no discoloration, it is stated.

The method of treating used is said to have very little detrimental effect on the anti-knock properties of the gasoline. This factor is of somewhat less moment to this company than to some of the other refineries in the district because Burford markets Ethyl gasoline under its own brand name, Crystal.

A standard plant for mixing Ethyl fluid with gasoline is in operation at the refinery. At present the gasoline requires the admixture of about 1½ cubic centimeters of Ethyl fluid per gallon to bring it to the prescribed Ethyl gasoline standard. When the cracking stills are in operation it is expected this will be reduced to 1¼ or 1 cubic centimeter, because of the higher anti-knock value to be expected in the cracked product.

Much of the gasoline produced is marketed under the Burford trademark through Burford dealers in nearby territory in Texas and New Mexico. Some of it also is sold in Kansas City, Nebraska, Michigan, Minnesota, Wisconsin and the Dakotas. The fuel oil is sold to railroads which take delivery at the plant or nearby, and to local power companies. The gas oil is shipped at present into the same territories where the gasoline is marketed, although some of it is sold locally.

When the cracking plant is running it is expected that most of the gas oil will be cracked.

Hydrogen sulfide is the principal source of grief at the Burford refinery, salt water not having shown up in the crude to any extent in the three months the plant has been in operation. Interesting methods are employed to combat corrosion of equipment by the hydrogen sulfide as well as to prevent the poisoning of workmen.

Vapors coming from the top of the bubble tower of the pipe still pass into a scrubber where they bubble through a water and ammonia solution. The water is continuously fed into the separator at a predetermined rate and continuously withdrawn, with the hydrogen sulfide it removes from the vapors, at the bottom of the scrubber.

Anhydrous ammonia is continuously sprayed into the scrubber in such quantity as to keep the alkaline strength of the solution at the desired point. A frequent check of the rate of corrosion in the equipment is maintained by testing the water for iron oxide content by means of potassium ferrocyanide.

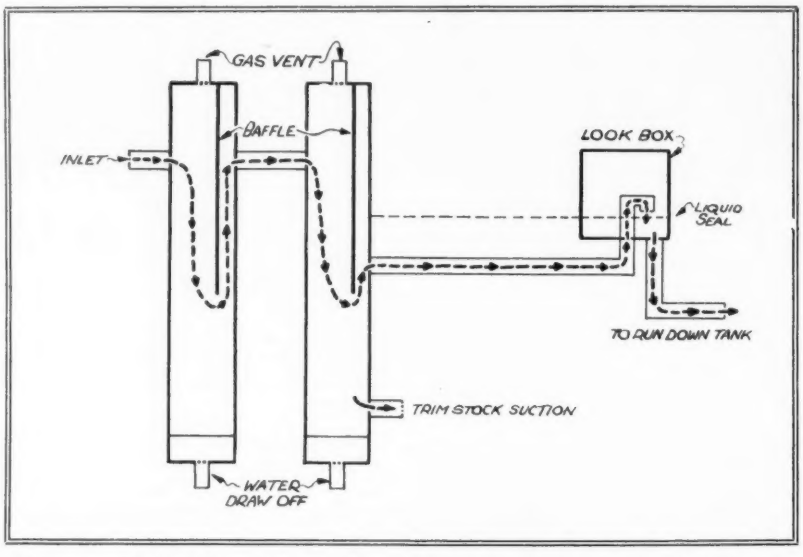
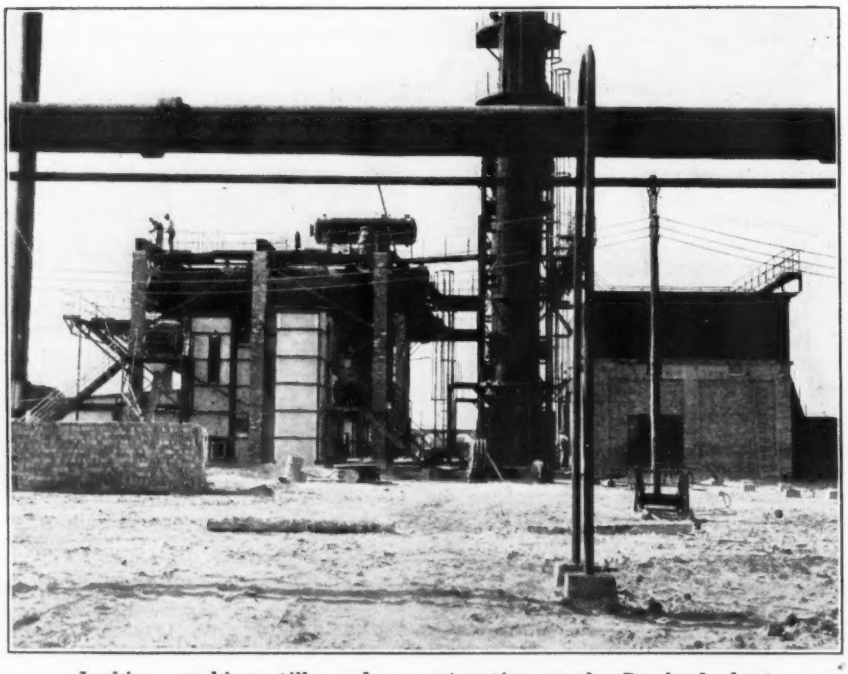


Diagram of liquid seal arrangement to prevent escape of hydrogen sulfide into the receiving house, Burford Oil Co. plant



Jenkins cracking stills under construction at the Burford plant

If iron is present, the color of the solution is blue, if there is no iron the solution is yellow. Very little corrosion has shown up so far, according to Mr. Thomas.

The gasoline streams run through lookboxes in the receiving house, contrary to the practice of many of the refineries operating on West Texas crude. A liquid seal arrangement prevents the escape of hydrogen sulfide gas into the tail house, with the consequent possibility of poisoning.

The accompanying drawing shows how the liquid seal device works.

The device consists of two gas and water separators in series just ahead of the look box.

Each of the separators is equipped with an open gas vent at the top and a water draw-off at the bottom. Each also is fitted with a welded-in vertical baffle extending downward a considerable distance from the top.

J. J. Thomas
Vice president Burford Oil Co., in charge of refining

The gasoline stream passes from the condenser into the side of the first separator near the top. The hydrogen sulfide gas escapes through the vent at the top and the liquid stream passes downward, under the baffle through an overflow pipe at the same height as the inlet pipe, into the second separator where a similar procedure occurs. What water is carried over in the gasoline stream from the scrubber, settles to the bottom and is drawn off from the two separators.

From an outlet line considerably below the level of the inlet pipe, the gasoline stream passes into the look box and thence to the run down tank, the liquid thus blocking off the H_2S gas from coming out into the look box.

Another feature of the receiving house arrangement at this plant is that the trim stock for regulating the temperature at the top of the pipe still bubble tower is drawn off from the second separator as needed. A pipe is fitted in the separator near the bottom, as shown in the drawing through which a pump takes suction.

This arrangement assures that the character of trim stock used is always exactly the same as that of the product coming off overhead from the still, an important factor where wet trim is used.

One reason for the selection of Jenkins cracking units for this plant

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was the lime-feeding feature which has been a factor since the early installations of the process. Lime is fed in with the charging stock, originally for the purpose of preventing the formation of hard coke. Now it is expected to perform an equally important service in neutralizing the effect of the hydrogen sulfide and other corrosive sulfur compounds which may be formed during cracking.

The Jenkins process, as is generally known, consists essentially of a shell still under which is suspended a bank of slanting tubes expanded into a cross drum at either end, the drums in communication with the shell still through vertical legs. In the long leg at one end is a motor-driven propeller which circulates the oil at high velocity through the tubes and the shell, taking off continuously vapors and fuel oil and feeding in fresh stock at such a rate as to keep the character of the material in the system substantially constant.

The pressure distillate from this process will be rerun in a unit also designed and built by the Graver Corp. This consists of a shell still and a bubble tower. This has a capacity of 1500 barrels a day.

The pressure distillate is fed in at the top of the bubble tower and distillation is practically completed in the tower. The unvaporized portions descend through the pans of liquid into the still which, being fired, serves as a reboiler, continuously driving off the light ends.

THE bottoms from this operation would make a good stove distillate or similar product. The raw pressure distillate on the way to the rerun tower passes through a heat exchanger countercurrent to the vapors leaving the top of the tower.

The refinery has a conventional spray pond for cooling the water, which is abundantly furnished by wells in the refinery yard. However, because of the hot summers, a Fluor cooling tower is being installed. This tower is designed to cool 1800 gallons a minute from 110 to 80 F.

Like the other West Texas plants, steam boiler plant is held down to the minimum at the Burford refinery. The boiler plant consists of two units, Scotch marine boilers of 250 horsepower each, operated at 125 pounds pressure and having a continuous blow down. The water is treated with a vegetable compound to keep it from foaming out of the boilers, it having a high content of sodium sulfate.

Practically all the equipment at the plant is driven by individual electric motors. Pumps are all electrically

driven but for the principal ones, steam standbys are provided.

The plant has an 80-car loading rack and neat cottages have been provided for housing the workmen.

* * *

Correction

A line was misplaced in a table published on page 40-d of the May 1 issue of NATIONAL PETROLEUM NEWS with the first of a series of articles on the refinery situation in West Texas. The line was the first under the heading, "El Paso." It listed the Pasotex refinery as "Combination skim and crack, building."

This reference should have been to the 3500-barrel refinery of The Texas Co. at El Paso and not to the Pasotex plant. The latter has a capacity of about 12,000 barrels a day, is operating and has no cracking equipment.

Book Reviews

NEARLY 150 pages of the complete third report of the Federal Oil Conservation Board to President Coolidge, just before he left office, is given over to "Petroleum resources of foreign countries and outlying possessions of the United States," prepared by A. H. Redfield, of the Bureau of Mines.

This is a compilation prepared from available publications dealing with the occurrence and nature of the surface indications of oil in countries outside the United States. It represents a summarizing of what has been published of an authoritative nature, much of it in foreign languages, on the geological structure of many foreign countries.

Copies of the third report, complete, may be secured by sending 30 cents to the Superintendent of Documents, U. S. Government Printing Office, Washington.

New Gas Pipe Line Map

WASHINGTON, May 10.—In response to a widespread demand for information regarding the location of natural gas pipe lines, the United States Bureau of Mines, Department of Commerce, has been assembling information from the transporting companies regarding the location of their individual lines.

The information has been transferred from company maps to base maps and the work is virtually complete so that the map should be ready for distribution before the end of the fiscal year. It is being printed for the Bureau by the United States Geological Survey.

Extra Deep

STUFFING BOXES

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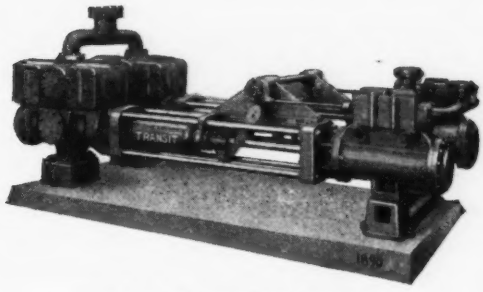

10 x 8 x 18" TRANSIT Horizontal Duplex Block Valve Pump, 210 gallons per minute, at 200 lbs., working pressure.

Pumping hot oil or hot tar is hard on rod packing, and leaky packing means danger of fire and sometimes to life. As a further precaution, each deep stuffing box is also fitted with a lantern gland from which any possible leakage past the packing is piped back to the suction again, without coming in contact with the air.

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Specification Fuel Oil Produced From Heavy Cracked Residuum

By Dr. R. T. Goodwin*

NEW YORK

THE Goodwin process for the stabilization of cracked fuel oil was developed by the writer during his connection with the Standard Oil Development Co. at Bayway, N. J. The studies leading up to the perfection of the process were initiated as a result of the difficulty of marketing cracked fuel oil in its natural condition due to the precipitation of organic and inorganic matter while in transit or in storage.

The process consists of special chemical and mechanical treatment of the residuum and yields as end products two materials of value—a stabilized fuel oil merchantable as Bunker A, B or C, depending on viscosity of residuum, and a carbonaceous, high B.t.u. value residuum suitable as a refinery fuel or a briquette binder.

Five years of research work on pressure residuum stabilization culminated in two and a half years demonstration on a semi-commercial scale of 250 barrels per day treating a large variety of residua extending over a broad range of gravities. On the basis of this work a plant will start up shortly treating 7000 barrels per day by this process.

The engineering, marketing and furnishing of these plants, together with the license rights under the process patents have been taken over by The Dorr Co. The operations used in the separation of the stabilized oil from the carbonaceous residua are carried out in equipment in which this company has specialized for many years and fully developed commercial units are available.

The two principal products from cracking operations are pressure distillate and pressure residuum or cracking coil tar as it is sometimes called. The residuum has a low viscosity, high content of B.S. and sediment, high specific gravity and favorable B.t.u. value.

In view of the difficulties attending its disposal in its natural unstable condition and the fact that approximately a barrel of residua results from the production of every barrel of finished gasoline by cracking operations, its utilization in merchantable form is a highly important consideration to refiners.

The residuum, after leaving the cracking stills, contains two sedimentary materials which are the cause of its being extremely difficult to market. One of these is inorganic matter, principally calcium sulfide, resulting from the use of lime in the charge stock for cracking. The other is carbonaceous matter resulting from the presence of unstable high carbon hydrocarbons.

In obtaining maximum gasoline yield from cracking, the pressure operation is gradually being carried farther and farther while the more intense the cracking the higher will be the content of carbonaceous solids. Extensive tests have shown that filtration, even with the use of a filter aid, not only incompletely removes the suspended solids present originally, but has no effect whatever on the unstable hydrocarbons which are in "solution" but which precipitate out after standing for several days.

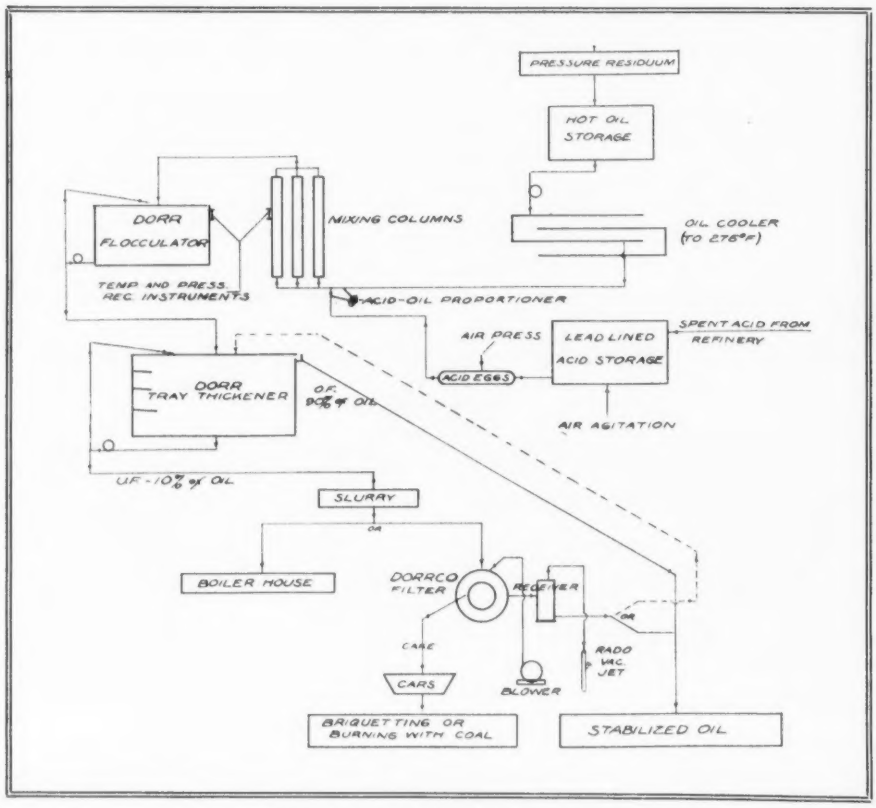
The length of time required for complete precipitation varies with the residuum but in any event it extends over a period of several months.

IN THE research work underlying the Goodwin process, the problem of stabilization was approached from the chemical standpoint. The addition of sulfuric acid or "acid oil" under carefully regulated physical conditions was found to modify the form of the unstable hydrocarbons in the residuum, causing them to be precipitated and flocculated with the other finely divided inorganic and carbonaceous solids present.

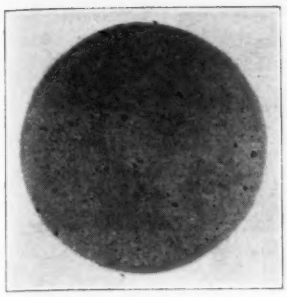
As a result of the treatment, the solids, now modified in form, settle rapidly in the oil, leaving a permanently clarified and stabilized oil entirely suited to market specifications of Bunker C fuel or better and merchantable as such. The reaction, while undoubtedly more complex than might at first appear, is chiefly of a polymerization nature and its efficacy is largely governed by the maintenance of proper conditions of temperature, pressure, mixing and flocculation.

The accompanying diagrammatic

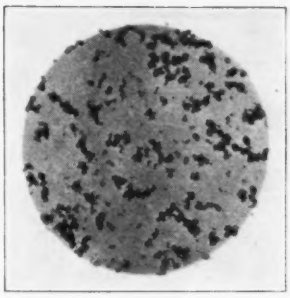
*Director petroleum division, The Dorr Co.



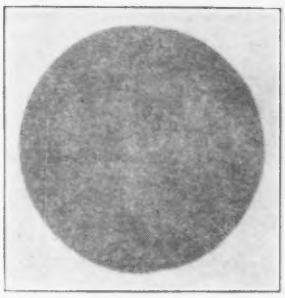
Flow sheet of Goodwin process



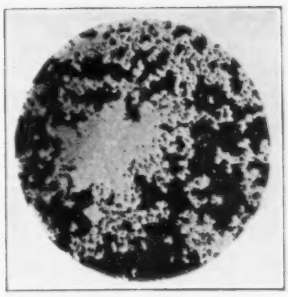
Photomicrograph No. 1—Pressure residuum after addition of reagent (magnification 80 diameters)



Photomicrograph No. 2—Mixture fed to thickener from the flocculator (magnification 80 diameters)



Photomicrograph No. 3—Clarified oil overflowing thickener (magnification 80 diameters)



Photomicrograph No. 4—Carbon slurry discharged from bottom of thickener (magnification 80 diamters)

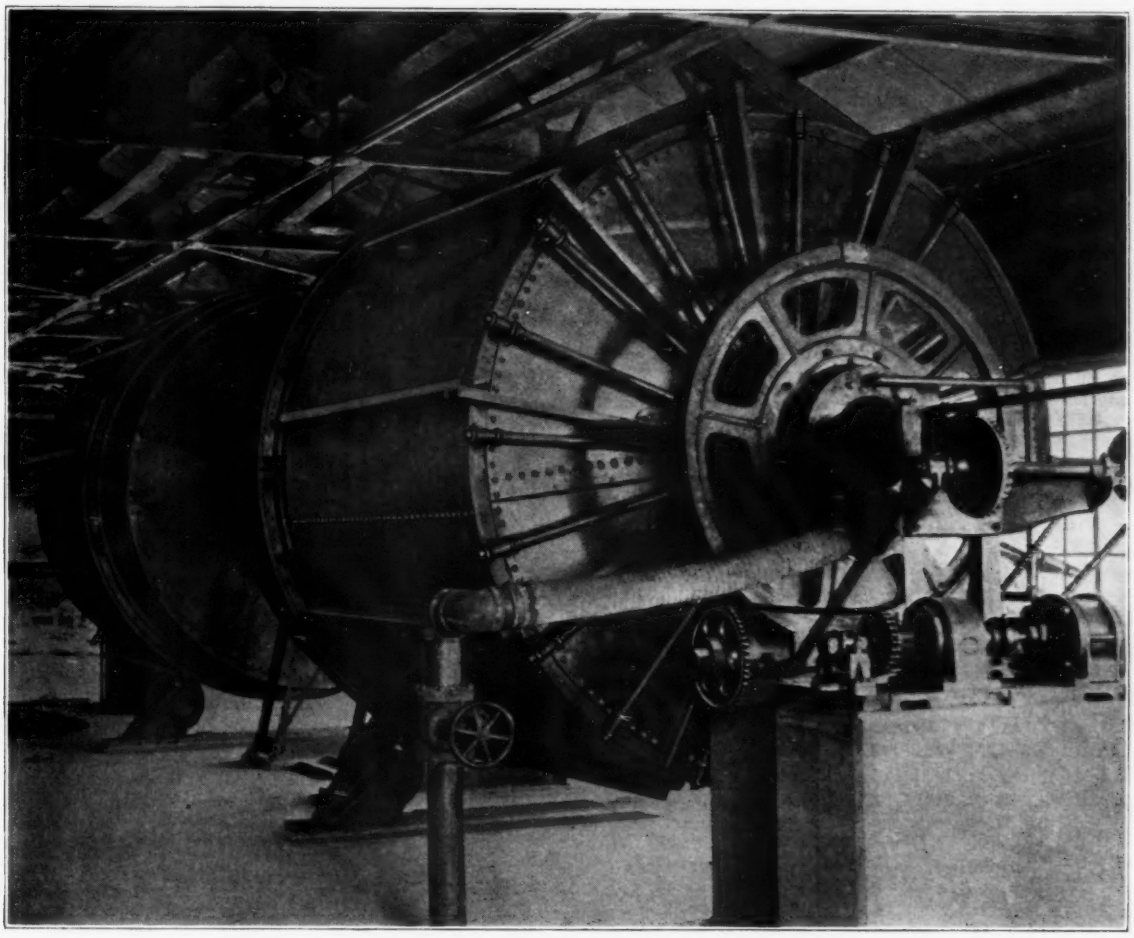
flow sheet shows the successive steps in the treatment of the residuum and the interrelation of the various equipment units which constitute the process cycle. The effect on the residuum of each treatment step is shown clearly by the four photomicrographs of the material.

Each photograph brings out clearly the physical structure of the residuum at a given point in the treatment. Viewed as a group they show the progressive changes which the residuum undergoes as it is converted from a difficultly merchantable material to two products, both of which are merchantable and for which markets already exist.

The Goodwin process may conveniently be broken up into four chief parts—cooling, acidulation and mixing, flocculation of carbon and gravity separation of carbon from the oil.

The residuum leaves the cracking stills at an elevated temperature. It is accordingly passed through a cooler to bring its temperature to that point which is correct for the subsequent processing. The cooler is equipped with thermostatic relays for the regulation of the cooling water and may be relied upon to hold the temperature of the outgoing oil within 5 degrees F. of the optimum value.

Spent acid from the refinery or "acid oil" is added to the cooled residuum by an accurate mechanical proportioning device, there being a definite amount of sulfuric acid required per unit volume of residuum. The acidulated residuum is thereupon passed through a series of mixing columns in which the pressure is gradually reduced to atmospheric at the point of discharge. Photomicrograph No. 1 (X80) shows the appearance of the acidulated residuum as it leaves the mixing columns. The suspended



Dorrco vacuum filters for handling carbonation slurry

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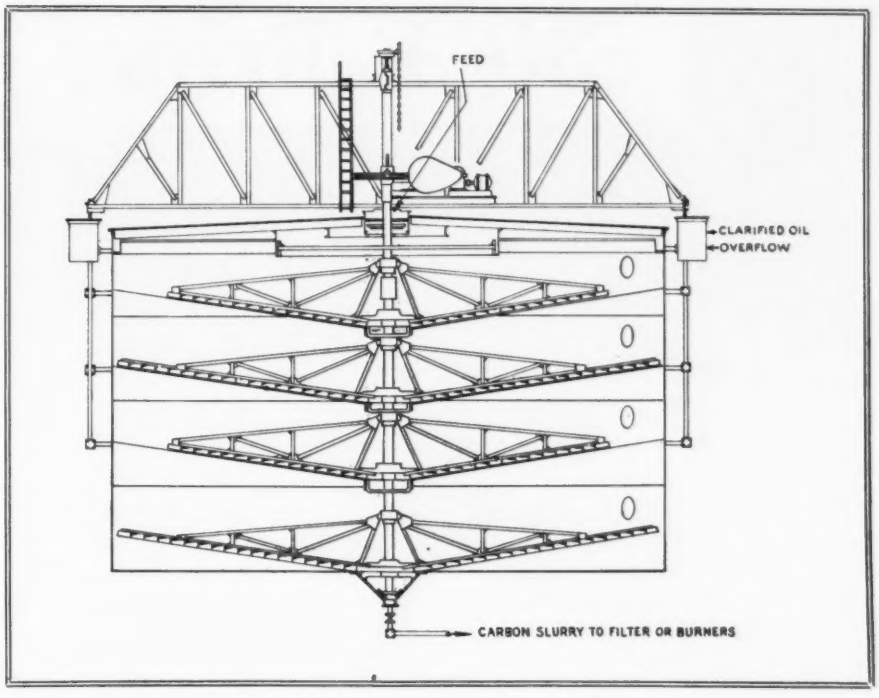
and precipitated solids it will be seen are extremely fine and exhibit no tendency to flocculate.

The next treatment step consists of carefully regulated agitation in a Dorr flocculator. Here the suspended and precipitated solids, which up to this time existed as separate and individual particles, coalesce and form large flocs which exhibit greatly improved settling qualities. Photomicrograph No. 2 shows the appearance of a sample of the flocculator discharge and indicates the degree to which the solids have been caused to form groups of coarser structure.



Sectional view or Dorr tray thickener

THE flocculator discharge, consisting of flocs of carbonaceous and inorganic matter suspended in a stabilized oil, is pumped to a Dorr tray thickener for separation into its two constituents. The Dorr Tray thickener is a mechanically operated continuous settling machine, the use of which has become practically standard practice in metallurgical, chemical and industrial operations for the gravitational separation of solids from dilute solid-liquid mixtures.

It consists of a cylindrical tank divided into several superimposed settling compartments by a series of dish-shaped steel trays, attached to the sides of the tank at their peripheries. A slowly revolving central shaft is provided with radial arms with plow blades attached, one set of arms per settling compartment, which sweep the settled solids to the center and to the bottom of the tank.

The treated residuum enters through a loading well at the top, the settled carbonaceous solids are removed from the tank bottom by a pump and the clarified and stabilized finished oil overflows from connections at the top of each compartment.

The oil overflowing this thickener is marketable as Bunker C fuel or better as far as B.S. and sediment are concerned and amounts to about 90 per cent of the oil in the original residuum. The finished oil is neutral because the acid used is all absorbed by the precipitated carbonaceous material.

Photomicrograph No. 3, taken from a sample at this point, shows the degree of clarification effected, while the table of operating data on the Bayway, N. J. semi-commercial unit gives B.S. and sediment content of typical residua before and after stabilization by the Goodwin process. The thickener can be operated to give a finished product with a maximum B. S. of 0.2 per cent which in turn has a sediment content of 0.03 or 0.04 per cent.

The carbonaceous discharge from the bottom of the thickener is illustrated by Photomicrograph No. 4. It contains about 40 to 50 per cent solid matter, flows freely, is readily pumped, and has a higher B.t.u. value than fuels generally used for steam generation at refineries. It is accordingly suitable as a refinery fuel and may be burned locally under the boilers without alteration of the existing oil burning equipment. A long flame travel is desirable and if lime is used a special refractory should be used to cover the furnace walls to eliminate fluxing.

By carrying the treatment one step further and filtering the carbonaceous slurry on a Dorrco filter, half of the stabilized oil in the slurry may be recovered, thus giving an overall plant recovery of 95 per cent instead of the 90 per cent secured with the thickener alone. The Dorrco filter used for this purpose is a continuous vacuum filter of the rotary drum type.

It differs from others in that the filter cloth is applied on the inside of the drum, the drum acts as its own pulp container and the filter cake discharged at the top of the drum, drops into an internal hopper and is removed by a belt conveyor.

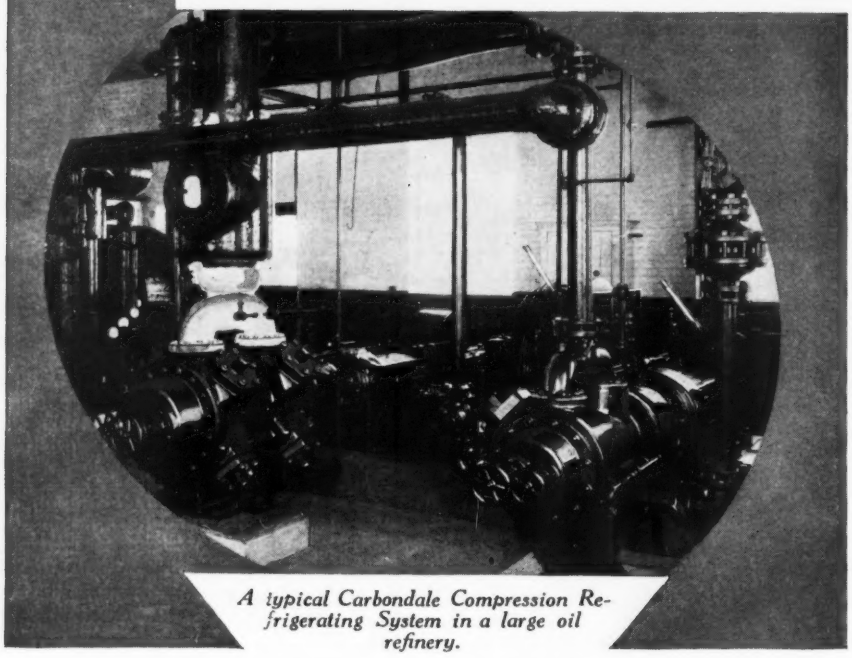
THE oil filtrate joins the thickener feed or overflow and amounts to 5 per cent of the oil in the original residuum. The filter cake contains approximately 85 per cent carbon, only a trace of ash and has a B.t.u. value of 15,000 to 18,000. It is an excellent binder for briquettes made from anthracite screenings or coke breeze, as it is a high grade fuel in itself and exhibits unusual cementing qualities. Briquettes made with it require comparatively low roasting temperature, 500-600 F., and burn without the formation of clinkers and practically without smoke.

The filter cake is discharged in small lumps and has been added to the stock pile and burned locally with coal. It has also been mixed with

Operating Data on 250 Bbl. per Day Goodwin Process Plant

	Fuel Oil—Blend Pressure Residuum and Crude Still Bottom Before and After Stabilization						Pressure Residuum Containing Lime		Pressure Residuum Unblended Before and After Stabilization				Pressure Residuum Stripped			
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Gravity A.P.I.	15.4	16.3	14	15.8	14.4	15.1	10.1	11.8	11.9	12.2	7.5	7.5	3.5	3.5	2	2
Visc. Furol at 122°F.	420	293	236	196	266	225	24	19	20	20	48	40	152	145	385	365
B. S. %	8.8	.6	7	.2	5.2	.4	1.7	trace	7.6	trace	2.6	.2	6	.3	5	.3
Sediment %	1.53	.01	.936	.016	1.0	.034	.46	.008	.079	none	.47	.04	.58	trace	.45	.1

-30° F. Brine!



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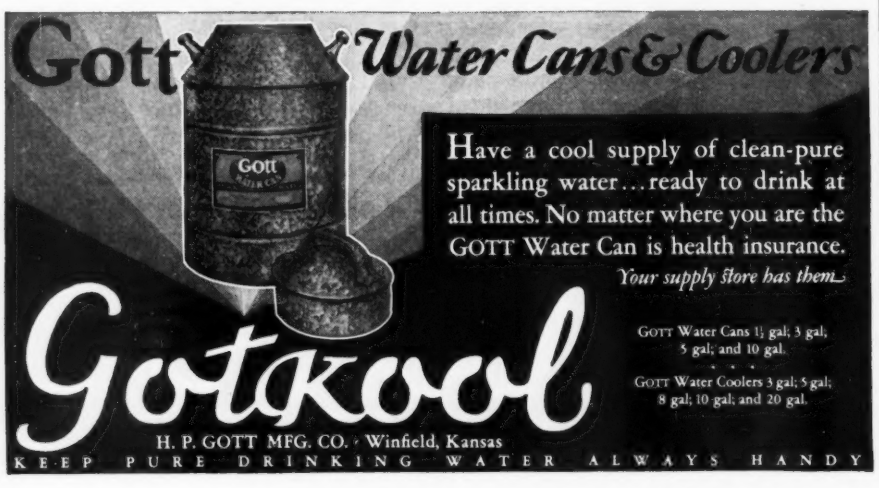
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fine sizes of anthracite such as buckwheat and pea and burned successfully with them on chain grate stokers.

A semi-commercial scale installation at Bayway, N. J., operated continuously for two years at the rate of 250 barrels per day. Residua representing a broad range of conditions met in refinery practice were put through the plant and the stabilized oil produced is subjected to laboratory test and actual commercial use under careful observation.

The accompanying table brings out the results of treating residua representing a range of 2 to 15 A.P.I. The carbon removed carried from 5 to 25 pounds per barrel, depending on the type of cracking process used, operating pressures and temperatures and the nature of charge stock.

The Goodwin process is applicable to all operations involving cracking and can handle residua with any commercial amount of carbon and inorganics. From a heavy bottom product of doubtful value and with an extremely limited sales field, it turns out a merchantable, high grade fuel meeting specifications for established fuel oils of Bunker C grade or better and a carbonaceous residuum suitable for local burning or sale as a briquette binder.

These advantages have a far reaching effect, as will be brought out below, in that they have a distinct bearing on the use of cracked residua, the use of lime to prevent corrosion and the increase in yield of gasoline.

The disposal of pressure residuum in its natural form has been virtually impossible in many cases due to its B.S. and sediment content. It has therefore been a common practice to blend high viscosity crude still bottom products with it in order that the solids may be held in suspension due to the increased average viscosity and the blended product thus made merchantable as a low grade fuel oil.

This process successfully treats such a blend of crude still bottom and pressure residuum to produce a Bunker C or better fuel. Few refineries have sufficient heavy crude still bottoms to blend with all of the residuum produced. For such refineries, and they are numerous, this process makes possible the complete utilization of residuum without reliance on the limited supply of crude still bottoms.

The use of crude oils high in sulfur entails a heavy wear on cracking equipment due to the corrosive nature of the sulfur. As much as 400 pounds of iron per day has frequently been lost in a single cracking unit. If a small amount of lime is added to the charge before cracking, the sulfur compounds are neutralized and corrosion is greatly reduced.

Unfortunately, the lime and sulfur form an insoluble calcium sulfide

which appears in the residuum and prevents it from meeting any type of fuel specification on account of the high sediment and ash.

By treating such a residuum by the Goodwin process, the calcium sulfide is removed with the carbonaceous matter and the stabilized fuel oil is marketed for the same grades as those produced from non-corrosive oils. Liming to prevent corrosion may therefore be carried to the extent desired without in any way affecting the merchantability of the stabilized residuum.

The degree to which cracking may be carried commercially is limited to a certain extent by the amount of B.S. and sediment permissible in the residuum, if the residuum is to be used as a specification fuel. The greater the degree of cracking the greater is the gasoline yield and the greater is the amount of B.S. and sediment in the residuum.

High yield of gasoline is therefore inconsistent with residuum of specification fuel grade, but these two desiderata may be realized commercially by subjecting the high sediment residua from extreme degrees of cracking to Goodwin process treatment.

Through removing in this way the limitations on cracking, a 5 to 20 per cent increase in gasoline recovery is made possible. In case of fuel crude cracking where gasoline yields of 10 to 12 per cent have been secured, the cut has been increased in many cases to 15 to 20 per cent, yet leaving a merchantable fuel oil after treatment of the residuum.

While many refinery officials claim that it is possible for them to operate their plants so as not to form excessive B.S. and sediment in their residua, it often develops that in so doing they are sacrificing gasoline yield, inviting excessive corrosion of equipment or in one way or another impairing overall efficiency. By concentrating on gasoline yield, prevention of corrosion, etc., and allowing the additional amount of sediment so produced to go to the residua and be removed subsequently in the manner herein described, operating improvements of a higher order are secured and a further step taken toward a realization of that unattainable ideal refinery in which only two end products are made—gasoline and a merchantable fuel.

Equipment Manufacturer Dies

CLEVELAND, May 10.—Frank B. Toombs, general sales manager of the Chicago Steel and Wire Company of Chicago, died at his home in that city, April 15, the result of pneumonia complicated with pleurisy.

He was one of the founders of the Chicago Steel and Wire Company, being a Director and Treasurer at the time of his death, as well.

"Banks and Tanks!"

Someone has said that in the oil industry sufficient tankage and bank backing mean the difference between disaster and weathering the storm. When capital is in banks in the form of cash every protection is used to guard it against loss. Why not use similar care to guard capital when stored in tanks in the form of oil by having all your tanks adequately protected against fire and evaporation loss—in other words, *Oceco Equipped?* The Oil Conservation Engineering Co., 877 Addison Rd., Cleveland, O.

Chats with the Automotive Engineers

By Paul Truesdell

Greasing Business Here for A Long Stay

I have heard the question raised, what will become of the "greasing palaces" of oil companies when all the automobile manufacturers put on their cars the so-called single shot chassis greasing system by means of which the driver, by pressing a button in the floor board, squirts lubricant to the various parts of the chassis?

After talking to some of the leading automobile engineers in Detroit, it seems to me the answer is, the greasing stations will keep right on doing business at the old stand.

In the first place, only a very few of the cars manufactured at present have this single shot system and there is no indication of a rush to incorporate it in the new models now being planned.

None of the cars under the General Motors banner and none of the numerous models embraced in the Chrysler-Dodge line use the single shot system. Neither does Ford. Neither does Studebaker. Thus it is seen at once that there are a great many cars that for a long time to come are going to depend on the greasing station and the greasing crew for chassis lubrication.

Automobile engineers pretty generally agree that the single shot system can be made very efficient as far as it goes. Most of them say, however, that when the system has done the best it can, there are still many vital points that it does not reach and that must be greased with a pressure gun.

They assert, also, that to put on a good single shot system on a car costs a good deal of money and to put on a poor one is worse than useless. The high cost makes it appear that the single shot system need not be expected to make its appearance on cheap or medium priced cars for some time to come at least.

If an oil company patron who has been getting his car greased regularly at a particular station shows up some morning in a new car and announces that he is through with greasing forever because his car has the single shot system, it would be quite in line for the man in the charge of the station to warn the customer to make sure that all the chassis points are really lubricated. The chances are the owner can be easily shown that they are not, and may again come back into the fold.

What Kind Of Oil Or Grease?

There is about as much difference of opinion as to what kind of grease or oil to use for pressure gun lubrication of the automobile chassis as there is to what kind of lubricant to use in differentials and transmissions.

The automobile men are as far apart on the question as are the oil technologists. Just now, the lubricants division of the Society of Automotive Engineers has a special committee on which are several oil men, studying the question of both differential and transmission and pressure gun greases.

There have been great changes in the past year or two in the nature of greases manufactured for automobile lubrication, due to the changes in the cars themselves. While not likely to posses as many possibilities for trouble as lubrication of the engine, the question of getting the right lubricant in the right place on the chassis is recognized as a very important one.

The system of classifying motor oils which is expressed in the S.A.E. numbers has been so successful from the automobile manufacturers' point of view, and has met such general approval among the oil companies, that the S.A.E. is anxious to devise, with the help of the oil industry, some similar system for handling the grease problem.

The joint committee is now trying to crystallize the ideas of both industries into a workable program of classifying and designating greases to be used in various types of cars and trucks.

No More Miles But Lots More Fun

We have often been told that the new high compression engines would be great savers of gasoline. If the compression could be raised high enough, due to the general availability of fuels of high anti-knock value, we could travel the same distance we do now on much less gasoline, so we are told.

If any marketer of gasoline has suffered from the fear that such increase in compression would cut down the total gallonage of gasoline consumed in the country he may set his mind at rest, according to the automobile engineers. Of course, the tendency of higher compression is toward getting the same amount of energy out of a smaller amount of gasoline but it will be a long time before this results in any reduction in actual consumption of gasoline, if ever.

In the first place in every new model automobile that is brought out, manufacturers strive to beat previous records for quick pickup, hill climbing power, ability to thread through the mazes of traffic with a minimum of gear shifting. This, of course, takes an engine of much greater horsepower than would be necessary if the motorist was content to get the utmost possible energy out of his gasoline in the most economical manner.

But he is not much interested in economy, he wants action, dash.

So the higher compression serves to translate the energy contained in the gasoline rather into more brilliant performance than into the greatest number of miles per gallon.

Progress in Anti-Knock Testing Method

So many factors affect the determination of the true anti-knock value of a gasoline that the committee working to develop a method for anti-knock testing has not yet arrived at the point when it wants to offer a method

to the technologists of the oil and motor industries. They have agreed on a testing engine, as before reported in NATIONAL PETROLEUM NEWS, and several of the engines are being built. Each member of the committee which consists of both automobile engineers and oil technologists is to have one. With the engines in operation, it is likely that the committee will make faster progress toward developing a fool proof system that will give the true rating of a fuel in reproducible values. T. A. Boyd, chief of the fuel section of General Motors Research Corp., is chairman of the committee.

Gasoline Now Furnished Does The Job Well

Automobile designers and manufacturers show little tendency to complain of the quality of gasoline now generally offered over the country to run their cars. They would like to have a greater anti-knock value, if possible, because in some cases they have raised the compression pressures of their cars to such a point that they have outrun the anti-knock value of the fuel. They realize, however, that improvement is going steadily forward and they do not expect the ideal all at once.

The automobile engineers whisper that the time may not be far off when some of the higher priced cars will appear with 12-cylinder or even 16-cylinder engines. Of course, when the expensive cars begin it, it will not be long until the medium priced cars and even the lowest priced will have such engines too, as witness the substitution of six cylinders for four. And it is likely the transition from the six to the eight and 12 and 16 will be even more rapid.

About The Vapor Lock Problem

The Detroit automobile men were much interested in the statement made by A. Ludlow Clayden, Sun Oil Co., in Washington, recently, to the effect that vapor lock is a phenomenon for the automobile designers to worry about and not the oil refiners. He stated that just the changing of the air intake on a car so it would inhale cool air instead of hot would eliminate vapor lock.

Some of the automobile engineers said they thought Mr. Clayden had gone a bit too far in stating that a difference in temperature of 60 F. could be made by changing the direction of the air intake, that is on most cars, but most of them admitted there was a good deal in his contention.

Mr. Clayden is an automobile engineer himself, having worked in England in the automobile business years ago, later going into the oil end.

"Conquer the Knock and Other Problems Fade"—Kettering

DETONATION—knocking—is now the major problem that confronts the American refiners and hinders their efforts to supply an ideal fuel for present-day motor cars; in fact, it is about the only serious gasoline problem, in the opinion of automotive engineers, the men who design and build automobiles.

Easy starting, vapor lock, crankcase dilution—all phases covered under the general heading of distillation range or volatility, will be easily solved when the ogre, detonation, is overcome. Also, the range of fractions that may be used satisfactorily as motor fuel will be considerably wider.

This is the view of Charles F. Kettering, vice-president of General Motors Corporation and general director of the Research Laboratories, who has been a leader in the development of the automobile since its beginning.

Mr. Kettering says that while gasoline is getting better all the time, even from an anti-knock standpoint, an infinitely superior engine would be possible if a better gasoline was available.

"I have been working for years almost exclusively on this problem of detonation," Mr. Kettering said, "not because it is a hobby of mine but because I am going some place and detonation is the barrier that stands across the road."

"The efficiency of our automobile engines," he continued, "ought to be limited only by the power to do useful work contained in the heat units of the fuel. That, however, is not the limiting factor. The actual limitation is that, halfway up the scale, the fuel begins to knock, barring further advance towards realizing greater efficiency. The refiners should redouble their efforts to produce a gasoline that will withstand the highest practical compression without knocking."

It was Mr. Kettering who, several years ago, identified detonation as the villain that was hindering automotive engineers in their efforts to improve the automobile. It was he who took this villain to a meeting of the Western Petroleum Refiners Association in Chicago, stood him up for all to see and told the assembled refiners that the existing knowledge of the oil business was not sufficient to permit the making of an anti-knock fuel direct from the crude.

Later Mr. Kettering set Midgley and his aides to work with the result that Midgley discovered tetraethyl lead which is the anti-knock element in Ethyl gasoline.

For the past six or seven years, since detonation was identified as the limiting factor in the compression pressures of automobile engines, the automobile manufacturers have been striving constantly to improve the efficiency of their engines by raising the compression while the refiners have been endeavoring to make a fuel more suitable to high compression engines. Both have made great progress but it is believed by both industries that there is still room for improvement.

In some cases compression pressures have been raised slightly beyond the anti-knock limits of generally available fuels and trouble, more or less, has resulted. At present it would seem that the boosting of compression has reached a temporary standstill. It is believed, in some cases, that compression pressures have been reduced on new models, by setting the spark in a retarded position.

It seems that refiners are on the right track in developing vapor phase cracking and in improving liquid phase cracking operations, all to the end of making gasoline of greater anti-knock value.

Even though automobile driving in winter has been steadily growing in volume until it seems that almost everyone drives as much at one season as at another, Mr. Kettering believes that many people drive as little as possible in cold weather because of trouble in starting and that the developing of a carburetion system that permits as easy a start in winter as in summer would greatly increase the use of automobiles during the cold months and thereby, of course, greatly increase the use of gasoline all the year round. Mr. Kettering's challenge to the refiners is in effect:

"Take the knock out of your gasoline and we will do the rest."

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

WHY not a custom cracking plant built and run co-operatively by members of the National Petroleum Association to crack their gas oil, slop wax, petrolatum and so forth into a product of high anti-knock value?

This might be one answer to the problem of making gasoline from Pennsylvania crude that would meet the competition of motor fuels from other crudes by equaling them in anti-knock value. The tendency of the paraffin hydrocarbons to knock easily seems the chief obstacle the Pennsylvania crude refiners must surmount in meeting present day gasoline requirements.

There are three or four cracking processes now available that are claimed to make products of highly concentrated anti-knock value; of such value, in fact that if blended in the proportion of 30 to 50 per cent with paraffin gasoline they will give it a value equal to or at least approaching the Ethyl gasoline standard.

One cracking plant, centrally located, could be built that would take care of all the gas oil produced in the Pennsylvania plants, probably, and the other products could be worked off through it by careful management. And if the cost of such a plant was split among even 15 or 20 refining companies it would not be excessive for any of them.

Then some system of royalties could be worked out so each plant would pay for cracking according to the volume put through, or on some such basis, and operating costs could be allocated the same way.

The only real cooperative program ever undertaken by members of the association—that of boiler operation improvement—paid big dividends to every one concerned, the figures indicate. The suggested cooperative cracking program, of course, would entail the investment of a great deal more money but in the long run would it not pay big dividends too?

It would be more practical, it appears, than for each plant to put in a cracking installation of its own. It seemed to be the concensus of opinion at the Cambridge Springs meeting that the refiners of Pennsylvania crude should revise some of their methods of gasoline manufacture.

We suggest this cooperative cracking program is worthy at least of close study and investigation.

* * *

ETERNAL vigilance is well exemplified in the vice president of an oil company in Texas with whom I talked a little while ago. He is in charge of the refining operations of the company.

This man told me that not a day passes, unless he is away, that he does not go to the refinery. His office is in town, the plant in the outskirts. He does not always spend the entire day at the refinery but he always spends several hours there.

Sundays and holidays are included in his working week. He always puts in enough time each day to visit all departments and see that everything is running smoothly. This notwithstanding the fact that the plant is in charge of operating men in whom he has every confidence.

I tried to find out whether he really visited the refinery so often in order to assure himself that it was running properly or just because he loves to be around among the equipment and the men who run it. It seems to be a little of both.

Anyway, the refinery seems to get excellent results.

* * *

C. R. WAGNER, asistant chief chemist of the Pure Oil Co. who spoke at the Cambridge Springs meeting of the National Petroleum Association, added his voice to that of others who have stated that the gum trouble encountered in some of the cracked gasolines is due to gum formed before the gasoline is used and not to gum formed in the engine.

The idea that certain constituents in the gasoline will be formed into rubber-like substances by the heat in the engine, is erroneous, he states. About the worst thing gum does, it seems, is to stick up the screen on the intake and prevent the gasoline from getting into the engine.

Mr. Wagner says he has found that when gum trouble appears it is generally the first time that particular gasoline is used. He points out that after tanks and pipes have been used for a long time for containing and transporting gasoline, especially cracked gasoline, they become lined with a deposit of gum.

A benzol blend or a vapor phase cracked gasoline has higher solvent power than the usual run of cracked gasoline. Hence, the first time it is pumped through lines that have long been used for other gasoline, the new product cuts the gum loose from the interior of the tanks and lines and carries it into the tank of the customer's automobile, later perhaps to make trouble in his engine.

* * *

OPPORTUNITIES for success in the refining business seem to be lying around the Mid-Continent in considerable numbers for those who are able to recognize and grab them. Sometimes a man or group of men able in management and skilled in selling are able to take over a refinery that another group has abandoned as a failure and turn it into a brilliant success. This is being demonstrated frequently.

It seems to be almost entirely a matter of management, technical ability and sales ability—plus the shrewd faculty of seeing just where a profitable market may be found or a special product made that can meet a need and realize a profit.

The time was when anybody who could put up a couple of stills and run crude oil through them could make money but those days, apparently, are gone forever. More and more ability and knowledge of the business are needed all the time, apparently, to make a success in the oil business, particularly the refining end.

Gasoline and motor oil delivery unit used in tests of hill climbing at Gates Mill, O., May 3

Light Truck Units Haul Heavy Load Up Hills in Snow Storm

TESTS of the hill climbing ability of four light truck tractors with a 794-gallon gasoline tank mounted on a semi-trailer, were held May 3 on Cedar and Chagrin River roads, Gates Mill, O., in spite of bad weather. These tests supplement tests* of six truck tractors held April 17 on the same hills.

Results of the tests are not entirely comparable because the April 17 test was held on a clear day when the hills were dry. The May 3 tests were held during a combined rain and snow storm and the hills were wet. Time was recorded every 200 feet May 3 instead of every 100 feet as in the previous tests.

Two makes of trucks in the May 3 tests were not entered in the April 17 test—the Reo and Dodge Brothers. International and Indiana tractors were in both tests but slightly larger engines were used May 3.

Each truck tractor drew a 794-gallon Davis tank, filled with gasoline, a pay load of 4922 pounds. The tank was mounted on a Fruehauf drop-frame semi-trailer.

The semi-trailer unit is one now in the National Refining Co.'s service in Cleveland and has delivered

*Results of April 17 tests were published on page 32 of NATIONAL PETROLEUM NEWS for April 24, 1929.

Data on Hill Tests

Data on hill 1, distance 975 feet, narrow dirt road, winding hill

		INDIANA		DODGE		REO		INTERNAT'L	
Grades	Per Cent	Time	Gear Used	Time	Gear Used	Time	Gear Used	Time	Gear Used
100	8½								
200	9½	14s	1	19s	1	24s	1-2	25s	1
300	12								
400	8½	27s	2	37s	1	44s	3-2	54s	2
500	6½								
600	12	42s	2	55s	1	1m 6s	2	1m 22s	2
700	11								
800	15	60s	1	1m 18s	1	1m 30s	2	1m 53s	2
900	11								
965	0	1m 12s	1	1m 35s	1	1m 48s	2	2m 12s	2

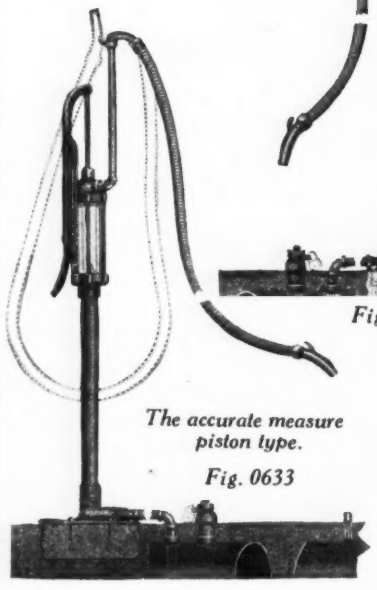
Data on hill 2, distance 3700 feet, brick pavement, winding hill

GRADES		INDIANA		DODGE		REO		INTERNATIONAL	
Feet	Per Cent	Time	Gear Used	Time	Gear Used	Time	Gear Used	Time	Gear Used
200	12½	14s	1	17s	1	21s	2	24s	2-1
400	10	27s	2	35s	1	45s	3-2	47s	2-1
600	10	38s	2	53s	1	1m5s	2	1m13s	1
800	10	54s	2	1m10s	1	1m24s	2	1m37s	1
1000	10	1m8s	2	1m26s	1	1m41s	2	1m58s	1
1200	9	1m25s	2	1m44s	1	2m0s	2	2m20s	1
1400	4	1m42s	3	2m1s	1	2m19s	3	2m42s	2
1600	2½	1m52s	3	2m15s	1	2m34s	3	2m55s	2
1800	3½	2m0s	3	2m27s	1	2m43s	3	3m6s	2
2000	6½	2m7s	3	2m44s	1	2m54s	3	3m19s	2
2200	8	2m17s	2	3m0s	1	3m7s	2	3m36s	2
2400	8½	2m31s	2	3m14s	1	3m30s	2	3m55s	2
2600	9½	2m43s	2	3m30s	1	3m47s	2	4m16s	2
2800	10	2m54s	2	3m38s	1	3m59s	2	4m30s	2
3000	10	3m0s	2	3m46s	1	4m7s	2	4m42s	1
3200	10	3m9s	2	4m4s	1	4m28s	2	5m5s	1
3400	7½	3m22s	2	4m24s	1	4m45s	3	5m27s	1
3600	7	3m36s	2	4m37s	2	5m5s	3	5m48s	2
3700	6	3m48s	2	4m53s	2	5m28s	3	6m9s	2

PUMPS

The continuous flow rotary with stand for underground installation.

Fig. 0302



The accurate measure piston type.

Fig. 0633

The popular rotary unit for barrel use.

Fig. 0301

The accurate measure piston in the gear type.

Fig. 0634A

FOR YOUR FARM TRADE

Your customers will buy these handy outfits. Thousands are already in use in country homes. Write for attractive poster to show your farm trade.

Write for Morrison Pump Book.

MORRISON BROS

DUBUQUE IOWA

almost 4000 gallons of gasoline in an 8-hour day and almost 2400 gallons in five hours on the Saturday before the May 3 test was run.

Specifications of the power units in the May 3 tests were:

Make	Cylinders	Bore Inches	Stroke Inches	Gear Ratio to 1	Wheelbase Inches	Rear Tires Inches
Indiana	6	3⅜	4⅝	6.3	137	30 x 5
Dodge	6	3⅜	3⅞	5.1	130	30 x 5
Reo	6	3⅜	5	7.0	134	30 x 5
International	4	3¾	5	6.125	130	30 x 5

All had 4-speed transmissions.
Indiana had level drive rear axle ¾-floating type.
All had dual pneumatic rear wheels.

Unlike the April 17 test, only one trailer unit was used May 3. On the earlier date four of the trucks also were tested with a 754-gallon frameless Columbian tank which had Whitehead & Kales running gear. This trailer is also in the National's Cleveland delivery service. It and the Davis-Fruehauf unit are being pulled by Model AA Ford truck tractors with dual transmissions.

Actual operating results of the two units the first two days they were in the National's service were published on page 40-b of the May 1, NATIONAL PETROLEUM NEWS.

In the accompanying photograph the Dodge Brothers tractor and the semi-trailer, now in active service of the National Refining Co., Cleveland, is a Fruehauf on which is mounted a 794-gallon Davis tank. There are motor oil tanks built into the running board.

ON THE LAZY BENCH

National Petroleum News

Such fun, this job hunting. You know, being a college man, I never wear a hat. Yesterday I was standing in a bookshop waiting to be hired, when a lady came in, picked up a book and handed me two dollars. Today, I'm going to loiter in the piano store.

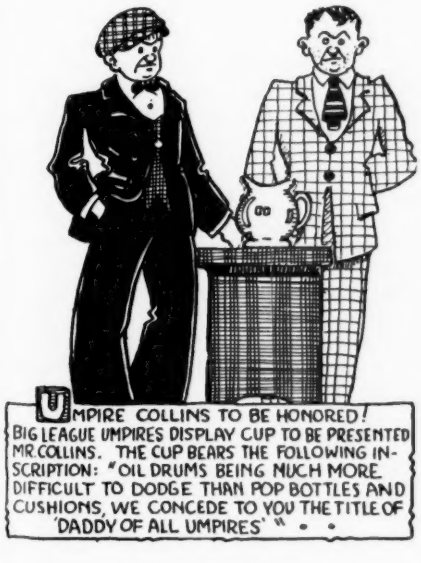
—Field Flashes

* * *

Judge—"You can take your choice, $10 or ten days."

Prisoner (still in a foggy condition)—"I'll take (hic) the money, y'r honor."

—Barnsdall


UMPIRE COLLINS TO BE HONORED!
BIG LEAGUE UMPIRES DISPLAY CUP TO BE PRESENTED MR. COLLINS. THE CUP BEARS THE FOLLOWING INSCRIPTION: "OIL DRUMS BEING MUCH MORE DIFFICULT TO DODGE THAN POP BOTTLES AND CUSHIONS, WE CONCEDE TO YOU THE TITLE OF 'DADDY OF ALL UMPIRES'"

By Roy R. Corey

The Helper

The plumber worked and the helper stood "helplessly" looking on. He was learning the business.

"Say," he inquired, "do you charge for my time?"

"Certainly, Boob," came the reply.

"But I haven't done anything."

The plumber to fill in the hour had been looking long at the finished job with a lighted candle. Handling the two inches of it that were still unburned to the helper, he said, "Here, if you've got to be so darned conscientious, blow that out."

—Our Sun

* * *

Two small boys, staring in a barber shop window of London, earnestly looked on as the barber went over his customer's hair with a singeing torch.

"Blimey, Bill," one of them ejaculated, "he's lookin' for 'em wiv a light!"

—Barnsdall

* * *

Hostess: "I'm delighted to see you, Mr. Hackleberry! I've heard so much about you."

Guest: "You can't prove anything."

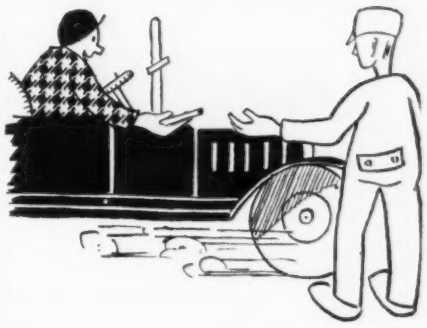
—Doherty News

* * *

"Have you no chivalry?" demanded the indignant female.

"No ma'm," replied the insulting male, "I traded it in on a Chrysler."

—Pure Oil News



"Here, grab these tickets"

THE opening game of the season. Or maybe the Bambino in town. Whatever his hurry, there's no delay if he has a coupon book.

You'll find that most of your customers prefer them after one try. Quick, accurate. Handy as a check book.

And the beauty of it is, you get their money in advance and their trade *regularly*. For anyone will drive out of his way to go where his coupons serve as cash.

Hundreds of companies both large and small have proved what a business maker they are. Companies like Sinclair, Texas, Standard, and Associated Oil specify *Rand McNally* Coupon Books.

Because they know the better quality printing they get—guaranteed numbering, certified count, quicker deliveries. And the savings that our large-scale production makes possible.

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SPECIALISTS IN COUPON BOOK PRINTING

Industry Warned Against Rules Written Into Codes by Trade Commission

By A. E. Heiss
N. P. N. STAFF WRITER

WASHINGTON, May 10

AMENDMENTS written into the code of marketing practices of the oil industry, or any other industry, by the Federal Trade Commission will be steps in the direction of government control of that industry.

This was the warning given business in this country generally by Col. Nelson D. Gaskill, former chairman of the Federal Trade Commission, speaking at a round table discussion on trade practice conferences at the recent annual meeting of the Chamber of Commerce of the United States here.

"The insertion of material by the commission into codes submitted by industries introduces an element into the situation that strongly smacks of government control in business," said Col. Gaskill. "That is not what we want. What we want is as great a degree of individualism in business as is consistent with the public good.

"Every move which organized business takes leads in one of two directions. It is a step toward the development of self-government, self control, or it is a step toward government regulation, government control and all those concepts which are utterly foreign to every principle of individualism which characterizes this people and this nation."

Approves Conferences

The former chairman approved the trade conference agreement, the trade practice conference itself as a move toward the solution of problems which could not be reached by legislation. But he was intending to warn business and industry to preserve its independence and to prevent the introduction of rules by the commission as destructive of that independence and self control business and industry should preserve for itself.

What he said at the round table discussion he called throwing a brick through the window, not as an enemy, but as a friend, to prevent the perversion of the essential and fundamental principle of trade association and trade practice rules; namely, that they are the products of the industry or business intended for the correction of evils that cannot be reached by law. He pointed the intrusion of rules formulated by the commission into the codes presented in the name of an industry or an association not warranted by anything in the law.

"As the matter now stands a trade practice conference has no legal status," said Col. Gaskill. "There is nothing in the law which authorizes the Federal Trade Commission to call a conference, there is nothing in the law which authorizes a conference to be held, and there is nothing in the law which gives the result of a trade conference any legal status.

"The fact that it is held under the direction and the guidance of the Federal Trade Commission serves to remove that element of suspicion, of uncertainty, of doubt, which otherwise might lead to a criminal indictment if the trade agreement so reached were found to be in violation of the antitrust law.

Legality Open to Test

"Let me make that quite clear to you, by giving you, only as my own opinion, that every trade agreement reached at a trade practice conference is always open to the test of its legality under the antitrust law. In its present attitude, said the former chairman, the commission had assumed a regulatory power over an industry which went into conference, which it did not have over an industry which remained out of conference.

"As I said in the beginning" said Col. Gaskill, "every agreement made at a trade practice conference is subject ultimately to the test of the antitrust laws. What is that test? Is it a regulation of competition or is it an unreasonable restraint upon trade? Does the commission apply that test? It does not.

Only Test Its Enforceableness

"The test which it applies is much narrower. It is whether it can enforce the agreement under the existing law. It is the absence, the want of existing law to deal with these various propositions, which makes the agreement necessary. If there were a legal remedy, there would be no need for agreements. All that would be necessary would be to apply to the commission for the enforcement of the existing law.

"The commission has divided conference actions into two groups: group 1 which the commission considers it is able to enforce because the declarations or resolutions in that group conform to existing law; and group 2, which the commission admits that it cannot enforce, because they do not conform to law."

In other words the former chairman suggested that, if industry and trade associations desired to avoid stepping toward government control, they had better not permit the commission to have anything to do with the rules in group 2 because it could not enforce them, lawfully, and it could not absolve the association or the industry in the event the courts condemned the rules in group 2. Col. Gaskill continued:

"Industry is subject to the possibility of a control by entrance into conference, through the action of the commission, for the simple reason that, when you send a conference resolution to the commission the commission exercises two powers with reference to it. First, it modifies your resolution in terms which seem to it to be proper but which do not meet your needs, otherwise you would have so stated them.

"By making additions and inserting new matter into rules which were not before the conference, and issuing those rules to the conferees for signature, there arises the possibility of control, which does not exist if

Facts Concerning Codes

A FEW facts regarding trade practice codes and conferences brought out at the Chamber of Commerce of the U. S. round table discussion were:

During 10 years since the first trade practice submittal, 50 trade practice conferences have been held under the auspices of the Federal Trade Commission.

Seven more are scheduled to be held during May and June.

Over 300 rules of business conduct have been approved by the commission as a result of these conferences.

Only 24 complaints involving violation of trade practice conference rules are pending before the Commission.

the industry remains outside of the conference operation.

"I have a deep rooted objection to the present practice for the reason that it obstructs the development of an essential, and what I believe to be orderly, local process of trade agreement in the line of self government."

Abram F. Myers, also a former chairman of the commission, disagreed with Colonel Gaskill. In his estimation the work of the commission was in the right direction, as shown by the fact that 50 such agreements had been made and seven conferences were scheduled to be held in May and June.

The roundtable conference brought forth many expressions of approval of the work of the commission, as creating a better understanding between business and government and making it the adviser of business, as the framers of the statute intended it to be.

Several speakers suggested that something be done toward obtaining more money and a larger staff for the commission, so that it might move faster for the disposition of work before it.

A general thought among the representatives present of industries that had made trade practice agreements under the auspices of the commission was that each industry would have to police itself to see that the rules adopted were observed, by suggesting to recalcitrant members that, if they did not like the interpretations of the rules made by committees of the industry, then the matter might be submitted to the commission for its interpretation and application.

Pipe West Texas Crude To Pittsburgh

OIL CITY, May 11.—West Texas crude is soon to move west by pipe line from the Atlantic seaboard to the Pittsburgh refinery of the Atlantic Refining Co.

F. D. Williams, president of the National Transit Co., made this announcement at the annual meeting of the company in Oil City a short time ago.

The National Transit Co. has been running 3500 barrels a day of West Texas crude from seaboard over the mountains to the Atlantic Refining plant at Franklin since July, 1928. It is now planned to run 3000 barrels a day also to its Pittsburgh refinery.

No changes in the pipe line are necessary to take this additional oil, said L. E. Lockwood, an engineering executive with the National Transit.

The crude is brought by tanker from the Gulf to Point Breeze, near Philadelphia, and there transferred into the line. The National Transit line was originally used to carry eastern crude to seaboard.

Both—
at no extra cost

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Are Precision Instruments of Established Merit

They are extensively used on Tank Trucks, Truck Loading Racks and Tank Car Unloading Lines and are universally satisfactory wherever it is desirable to secure accurate measurements.

We have made a technical and practical study of the problem of accurately measuring petroleum oils and are prepared to give expert advice and assistance on the subject.

Engineers from our home office are permanently located in the Middle West and on the Atlantic Coast, for the purpose of helping our customers with their metering problems.

It will pay you to use our meters and profit by our knowledge and experience.

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The DIAL of for Tires

Tire Makers are Telling Millions of the Importance of Proper Tire Pressure

Tire makers today are building more mileage into tires than ever before in tire history. The short life of the old-fashioned cords has been unbelievably superseded by the longevity of the new balloons. But alongside the development of super-quality, tire makers have found it imperative to emphasize the absolute importance of proper inflation.

Through newspapers, magazines, dealer literature—through every available medium of publicity—motorists are being told that under or over inflation kills balloons. That three or four pounds variation lops off thousands of built-in, paid-for miles. That precise pressure must be maintained *at all times* if tires are to deliver maximum mileage.

ECO-TIREFLATOR gives motorists exactly what they want—measured air, delivered entirely automatically with absolute accuracy. It positively eliminates guesswork—greatly simplifies pressuring service.

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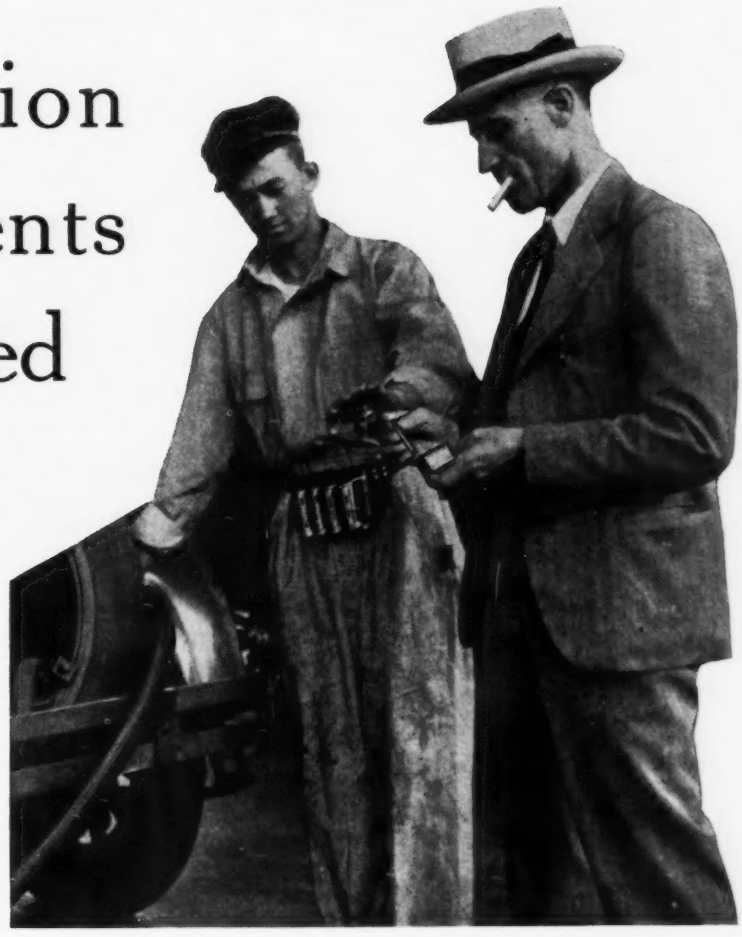
Sign of Precision

Air Must Be Measured

Service Station Fires, Accidents May Be Avoided By Trained Salesmen

*By C. G. Allenbach**

(Read at National Safety Council Conference, Kansas City, April 30, May 1)



Ask the customer to refrain from smoking

I BELIEVE that the service station where the salesman in charge is sufficiently educated and interested, or where the supervision is proper and frequent enough, is now safer than the premises of any other retail merchant. We do not increase street hazards resulting from customers parking at our curb, we increase the view and safety of cross street traffic by not building out to the property line, and our merchandise is not delivered in packages that results in littered basements and alleyways resulting in the serious personal injury and fire hazards to the premises and the neighborhood, as prevails on the premises of almost any other retail establishment.

Because of some prejudices that restrict us in zones beyond the requirements of other merchants, we should exert ourselves faithfully to the proper educating of the public and governments to these facts.

I believe that the most serious hazard of smoking on the part of our customers is one in which we need assistance, and that the National Safety Council and fire prevention bureaus are in a splendid position to assist us in educating our customers to this hazard.

Bulletin, sign or billboards on service station premises are becoming popular, but it is to be noted that there are instances where these boards restrict the view of both the customer entering and the one leaving the station. As such they not only create a traffic hazard, but also defeat their advertising purpose in concealing the station proper, which after all is the major advertising medium. Too much care cannot be given the placing of each individual installation. Where flood lighting is resorted to, to further illuminate the premises, care should be exercised in placing them so as to prevent the rays, either direct or reflected, from glaring into the drivers line of vision while either entering or leaving the station.

Air stands, pits and other greasing facilities render the occasional service, and should be so placed as to not only clear the general path of traffic through the station entirely, but to also prevent that patron in leaving these facilities from entering this line of traffic until after he is in a position to move forward.

The pits themselves should be so designed or long enough as to absolutely permit the attendant to exit quickly when a car is in position for service. The outdoor pits should be enclosed with an adequate barrier to prevent the careless from walking into them, and they should be well lighted.

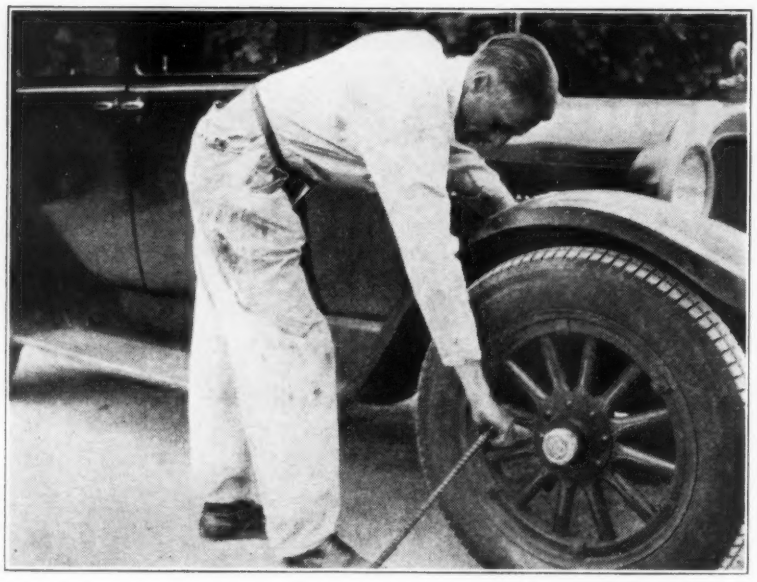
Fill pipes to the underground tanks should not be placed close to open outdoor drain pits. In receiving a large delivery of gasoline much vapor is expelled from the tanks. Being heavier than air, and with just the right conditions this vapor might flow and remain in the pits until the placing of a car might ignite them.

The manifold valve or other controls to lifts should be immediately adjacent to the lift (and enclosed in a panel housing) where the attendant can easily view the operations of the lift and control its movements.

Gasoline pumps and other dispensing apparatus should be placed in such relation with the building and one another so that the space is adequate for the most inexperienced driver to approach to position with ease and in the entire absence of uneasiness.

The drive should be clear at all times of any obstructions, all appliances, tools and hose not in use. Defective crank cases frequently permit of small pools of oil on the driveway. These are not only unsightly but as hazardous as a banana peel to one on foot. A water saturated rag will absorb and clean oil from a concrete

*Cities Service Oil Co., Chicago.



The fender protects the eyes and ears should the tire blow out

drive quickly and cleanly if used at once.

Ice on the drive is a similar hazard to pedestrians as well as the cars. Service station buildings should be well fitted with rain troughs and down spouts to prevent water from dripping on the drive. Alternate thawing and freezing permits melted snow to drip to the drive freezing again and again, a continual source of trouble and hazard.

Under no circumstances should children be permitted to play on the driveways, nor inflate bicycle tires at the air stands.

IN RECEIVING bulk gasoline deliveries at the station and mounting the truck to check the contents of compartments the "Servicing Salesman" should take his time and be sure of his footing. Slips are easy, and frequently result in broken arms or legs.

Actually gauge the underground tanks and determine definitely if there is room for the compartment or load. Stop the truck motor and extinguish its lights. Prevent all, except the person in charge of unloading, from the vicinity of the fill pipes and be more than cautious regarding the lighting of matches and smoking on the premises. After the hose has been placed and the valves opened, the man in charge should remain at the valves with full attention to the job.

Under no circumstances should he leave the position that would permit him quick action in the event of an emergency. Because gasoline vapors are heavier than air and flow along the ground, particular care must be exercised in keeping persons away. A match, at even some distance, might ignite the vapors and result in a very serious fire. Discontinue unloading in the event of an electrical storm.

When the load is received, securely replace and lock all fill pipes. To fail to do it *now* may mean that it will be indefinitely forgotten.

In rendering crank case drain or greasing service, pilot your customer over the pit or on to the lift so that he brings the car to position without injury to the tires or rimbolts, or even drive into the pit. In event of a smal pit, do not permit the car to be so placed as to cover it and prevent you easy access and exit. See that the car centers the load if on a lift. Set the brakes and block the wheels.

Gasoline soaked cloths in the hip pocket will burn the skin

Stop the motor. Where these facilities are indoors the motor should not be permitted to run a moment longer than necessary. In cold weather the doors should not be closed until after the motor has been stopped, nor should the motor again be started until after the doors are opened. Exhaust gases contain a high percentage of carbon monoxide, which is a stealthy and very deadly gas.

PROVIDE yourself with goggles for the overhead work while under a car. It is practically impossible to do this work without suffering much dirt getting into the eyes, resulting in much discomfort, inflammation and frequently an infection. In spraying springs with compressed air, again be careful regarding matches and smoking.

It is not the thought that the "Servicing Salesman" be responsible for the mechanical inspection of the car. He should, however, be on the alert, while under the car, for such things as loose bolts, universal joints and tie rods that might result in accidents, and call them to the attention of the customer.

Crank case drainings should not be permitted to remain in the open vessel into which they are drained from the crank case. They are mostly highly diluted with gasoline and would be easily ignited from a carelessly thrown match or cigarette. Dispose of it immediately into the container for the purpose.

When the pits are not in use they should be covered or closed by chain or other gate.

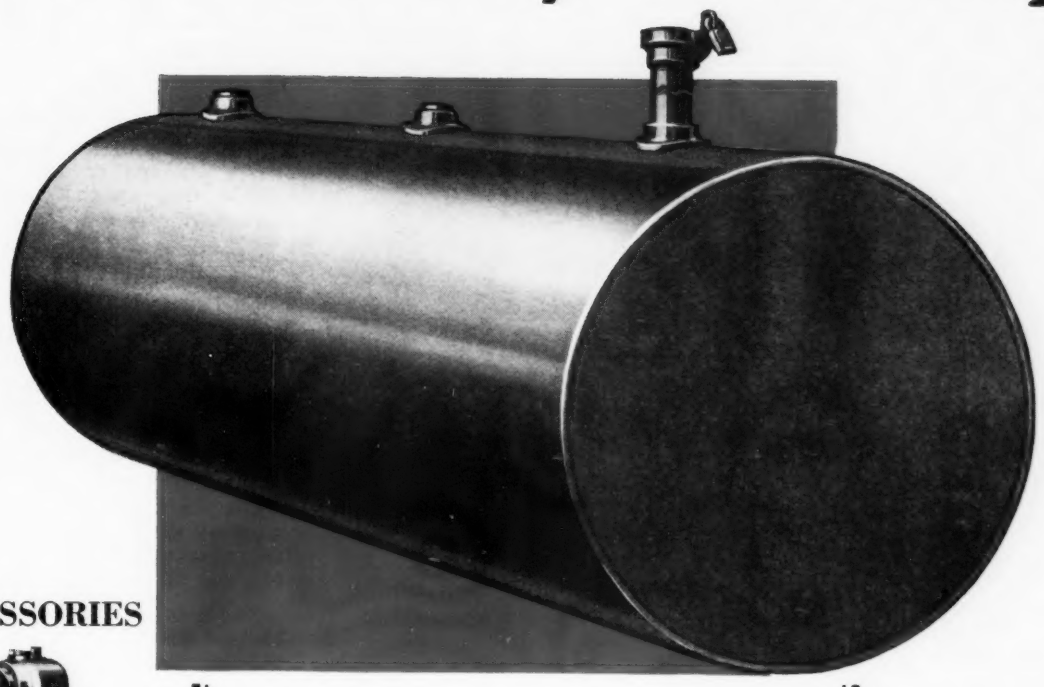
Do not use gasoline for cleaning purposes.

After opening the service station in the morning, the first duty of the "Servicing Salesman" (where hose is removed from the pump for the night) is to attach the hose to the gasoline pumps. In doing this he should be particular in making the connection tight so that gasoline cannot leak. Such leaks saturate the clothing of the service station salesmen, frequently causing burns, and it is well to remember that gasoline soaked clothing may be easily set in fire and very hard to put out.

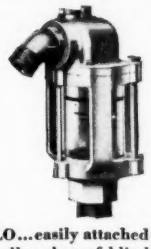
* * *

Running across the driveway in front of an approaching car has caused many falls, resulting in sprains and other injuries. If it has not been possible for the "Servicing Salesman" to take his position at the pump before the approach of the car, he should wait in the service station door until the car has come to a stop at the pump and not take the risk of

Not Only Pumps

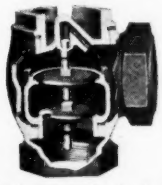


ACCESSORIES



SITEFLO...easily attached to practically all makes of blind pumps.

Wet hose nozzle...1 in. or 1¼ in. ...straight or flexible tip...with or without flange.



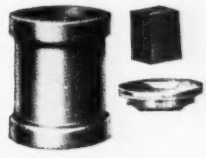
1¼ in. brass angle check valve.

Tanks

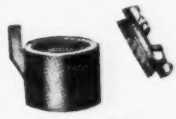
THE complete RAPIDAYTON line of gasoline dispensing equipment includes not only pumps, but tanks, tank fittings, and accessories...And every item in the line is of the same high quality that has made RAPIDAYTON pumps famous.

THE DAYTON PUMP & MFG. CO.
Dayton, Ohio, U. S. A.

TANK FITTINGS



Cut 46...Water tight fill box.



Cut 49...2 in. air tight fill cap.

Cut 49-A...2 in. vented fill cap.

Rapidayton

TRADE MARK REG. U.S. PAT. OFF.

THE DAYTON PUMP & MFG. CO., Dayton, Ohio, U. S. A.
Gentlemen: Please send us your new bulletin on tanks, fittings and accessories.

Name_____ Address_____

City_____ State_____

© T. D. P. & M. Co. 1929

injury by running across in front of the car.

When the customer drives in close to the pump block and the salesman is not all in the clear, serious accidents may result. Reports of bruises and sometimes breaks of the feet and legs are not at all unusual.

* * *

Watch Smokers

The vapor flowing out of the tank as it is being filled with gasoline may create a highly explosive or flammable mixture in the air and a burning match would be just the thing to start a fire or cause an explosion. A customer once stood at the front end of his car while the tank was being filled and lighted a cigarette. The wind was blowing the fumes from the tank under the car and when the customer threw the lighted match to the ground he lighted the vapors that destroyed his car.

Courteously request your customer to refrain from smoking while the tank is being filled, for his protection as well as your own. Do not service any vehicles, such as trucks with acetylene lights or "collegiate chariots" with lanterns or other open flame lights until these lights have been extinguished.

* * *

The alert "Servicing Salesman" will request his customer to stop his car so that the station salesman can see the tank. It is most important to watch the gasoline tank and avoid unnecessary spills and waste of gasoline. Practice the utmost care that the tank is not more than filled. The salesman should permit nothing to distract his attention from the gasoline tank while pumping.

What To Do After Spills

In case of a spill first remove the hose from the tank and replace the tank cap.

Next, wipe the gasoline off the tank for the benefit of the paint and the appearance of your customer's car.

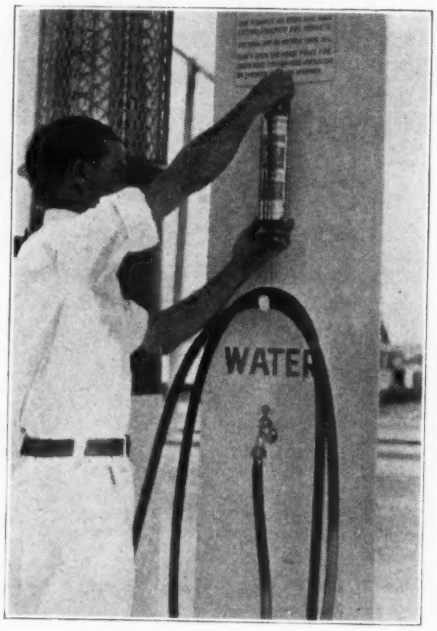
Many station salesmen have learned by experience that a gasoline soaked cloth in the hot hip pocket will moisten the clothing with gasoline and result in a real live burn. It is often well to remember that gasoline soaked clothing is easy to set on fire, and such a fire is mighty hard to put out.

Put gasoline soaked cloths in a metal container with a tight cover. Such a container prevents ignition of oil soaked cloths. Of course it is unwise to permit a customer to light a cigarette and toss the burning match into this can.

Continue with the proper care of the spill. Push the car away from the spill and lessen the possibility of vapors being ignited from hot carbon from the motor.

On concrete drives it is well to wipe up the spill.

Where there has been a spill of a considerable amount of gasoline, wash



Keep the fire extinguisher handy and know how to use it

the spill with water which helps to dissipate the gasoline and the vapors and clear the locality of explosive or flammable mixtures.

To make a good job the squeegee helps in the final clean-up.

The question arises what has become of the mop. Has it been set inside of the service station where there is usually an electric compressor motor that might create a spark that would ignite gasoline vapors that could be caused by the drying mop. It is much better to place the mop in the open air to dry so that the vapors may be dissipated and not create a flammable or explosive mixture.

Two men working together never overflow a tank but occasionally men do not work together and an overflow results.

It is better to take a look at the tank and see that it is full rather than to try to squeeze one more gallon into it. When the tank is full drain the hose and in taking it out of the tank avoid spraying gasoline over the customer's car or on your clothing. A few drops of gasoline from the filling hose dropped between the shoelaces will make a burn on the foot.

It is especially necessary that gasoline spills be avoided on dash tanks. A hot motor vaporizes the gasoline very quickly and any kind of a spark when the motor is started can ignite the vapors. Gauge the tank. Know what it will hold and prevent a fire and damage from this cause. Do not depend entirely on the gasoline gauge in determining how much any tank will hold. Gauges are seldom absolutely accurate. Wherever possible, gauge the tank with a wood gauge stick.

The alert salesman sets his pump for the quantity of gasoline required as indicated by the gauge stick and keeps his eye on the gasoline tank rather than on the pump or on the customer.

* * *

Helpful (?) Customers

Customers are sometimes overzealous and want to help. By holding the nozzle of the filling hose away from the gasoline tank and letting the gasoline flow into the tank a static charge is sometimes built up on the nozzle and when the nozzle is brought closer to the tank or the static charge is built up great enough a spark jumps from the nozzle to the tank and ignites the vapor coming out of the tank.

The nozzle on the filling hose should be kept constantly in contact with the tank so that it will be impossible for a static charge to be built up. The hose used at service stations is metal lined or metal inserted and if properly installed forms a metallic connection from the pump to the filling nozzle and when this nozzle is in contact with the tank forms a complete bond preventing static accumulation.

If the customer insists upon helping, watch that he does not break this contact. Do not start pumping until the hose nozzle is securely placed in the gasoline tank and there is sufficient slack in the hose to prevent strain on the hose or the nozzle from being pulled away from the tank.

* * *

How To Fight Fire

Should a spill and fire occur attack the fire at its base. To try to put out the fire at the tank would be next to impossible, as the flames arising from the spill would continue to ignite the vapor at the tank. Leave the hose in the tank as to take it out would spread the gasoline and naturaly spread the fire. Under these conditions the hose has been jerked from the tank spraying gasoline on customers and station salesmen and setting them on fire.

* * *

To fight a fire under the hood of an automobile, leave the hood down and squirt the extinguisher fluid through the radiator and ventilation openings. Carbon tetrachloride when sprayed on fire creates a gas that excludes oxygen and when oxygen is not present to sustain combustion the fire goes out. For that reason a carbon tetrachloride extinguisher puts

Will Your Money *pay for experiments* or BUY EXPERIENCE?

ERIE METER PUMPS have passed the try-out stage. The major experimental work is now history.

Seven years of refining, re-designing, improving have won respect and recognition for Eries as a product of outstanding engineering excellence.

Seven years of field tested experience attest the practical ability of Erie Meters to perform capably under actual service conditions.

The original Erie installation is rendering satisfactory service after seven years of operation. 21,000 installations prove the practical performance abilities of Erie Meter Pumps.

To oil marketers who are interested in securing the greatest value for their money in meter pumps—who prefer to buy experience rather than to pay for experiments, Erie offers the practical benefits accruing from 7 years of specialized and exclusive meter pump manufacturing experience.

The new 1929 models of Erie Meter Pumps—new in design, improved in construction, refined in appearance and bearing the 5-year service guarantee introduced by Erie—are now ready. Write for illustrated Bulletin.

ERIE

METER SYSTEMS, INC.

Home Office and Plant: 10th & Wallace Streets, Erie, Pennsylvania

BRANCH OFFICES AND WAREHOUSES AT

Boston, Mass. . . . . 111 Roxbury St.
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Pittsburgh, Pa. . 3753 Bigelow Blvd.
Syracuse, N. Y. . . . 102 Mosley Drive
Cleveland, Ohio . 204 Plymouth Bldg.
Minneapolis, Minn. 900-14 Sixth Ave., S.E.
Los Angeles, Cal. 135 W. Washington St.

the fire out much more quickly when the hood is not raised.

* * *

When the station is open for business in the morning put the fire extinguishers in place by the pump. Fire extinguishers should be as convenient as possible at the service station pump and every station salesman should know that the fire extinguisher is in its place and just where this place is. A fire can be put out easier right at the start than any other time and with less damage resulting. Inspect fire extinguishers regularly.

* * *

Foam type extinguishers contain water and if permitted to freeze naturally become inoperative. During frezing weather they must be housed in a warm place.

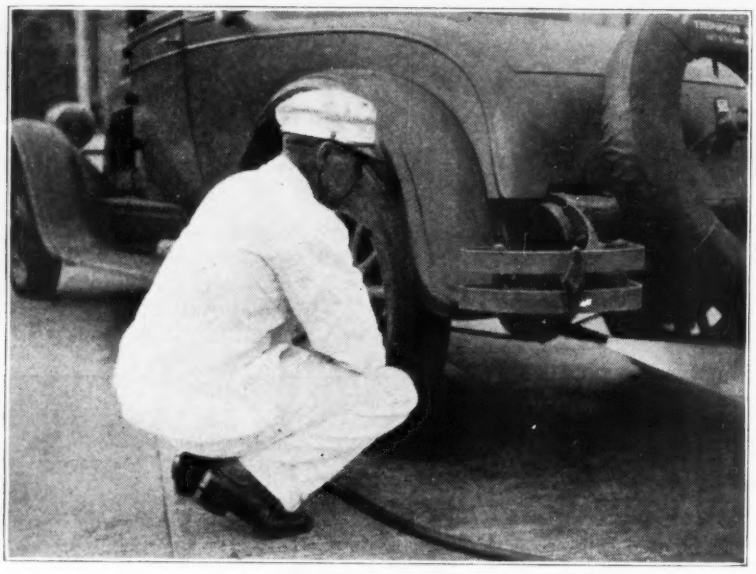
Every station salesman should know how to turn in a fire alarm and where to find the closest fire alarm. These should be among his first instructions when beginning work at a service station.

* * *

Avoid Interruptions

Do not permit anything to interrupt your serving of gasoline to a car from the time you remove the tank cap, have drained the hose, removed the nozzle from the tank, replaced the fill cap and placed the hose back on the pump. Inattention of "Servicing Salesmen" has permitted customers to drive away with filling hose in the tank. This invariably results in damage to the hose or pump and sometimes the hose whips around and strikes the station salesman, injuring him.

At least one company requires its station salesman to retain the tank cap in the left hand during the filling operation and should the station salesman fail to complete the delivery by taking the hose out of the tank when he steps up to take the customer's cash the presence of the tank cap in his hand is noticed which is sufficient warning to the station salesman to take the hose out of the tank and replace the cap.



Stop the motor and avoid breathing carbon monoxide gas

Care should be taken to keep twists out of the filling hose for a twist in the hose will cause it to jump out of some type of hangers and if it does jump out it may strike a service station salesman or a customer and cause an injury. "Servicing Salesmen" should actually drill themselves to the uniform and careful placing and removal of hose in such a manner as to destroy every possibility of throwing any gasoline on the car, themselves or others.

* * *

Practice the utmost care in servicing cars that have the gasoline tank or fill connection inside the car. Two of the doors, at least, should be opened so as to dissipate the vapor that is expelled from the tank, from the car. It is even well to suggest to the occupants of the front seat, at least, that it would be safer if they stepped from the car. Be more than careful not to overflow the tank. Customers in closed cars have lighted a match shortly after a tank was filled causing fires and explosions within their cars.

* * *

"Servicing Salesmen" should not attempt to service gasoline to a motorcycle by hose. They usually overflow and the gasoline running down over the hot engine and connections creates a vapor that is easily ignited. Have the motorcycle removed away from the pumps and fill it carefully with a one gallon measure (or smaller) and funnel.

Hints on Cranking

Occasionally it is necessary to "crank" a customers motor. In rendering this service the salesman should know that the customer has retarded the spark and placed the gear in neutral. Position yourself clear of the crank. Do not straddle the bumper.

Cranking a motor with the car in gear has resulted in injuries of station salesmen when the car moved forward jamming them against another car at the station.

Keep 'Gas' Containers Outdoors

Gasoline containers should not be placed in cabinets until they are thoroughly dry and the gasoline vapors have been dissipated. Gasoline vapors are three and a half times heavier than air and by inverting the gasoline container outside of the service station in the open air the gasoline drains out of the container and the vapors are dissipated in the air where they will do no harm.

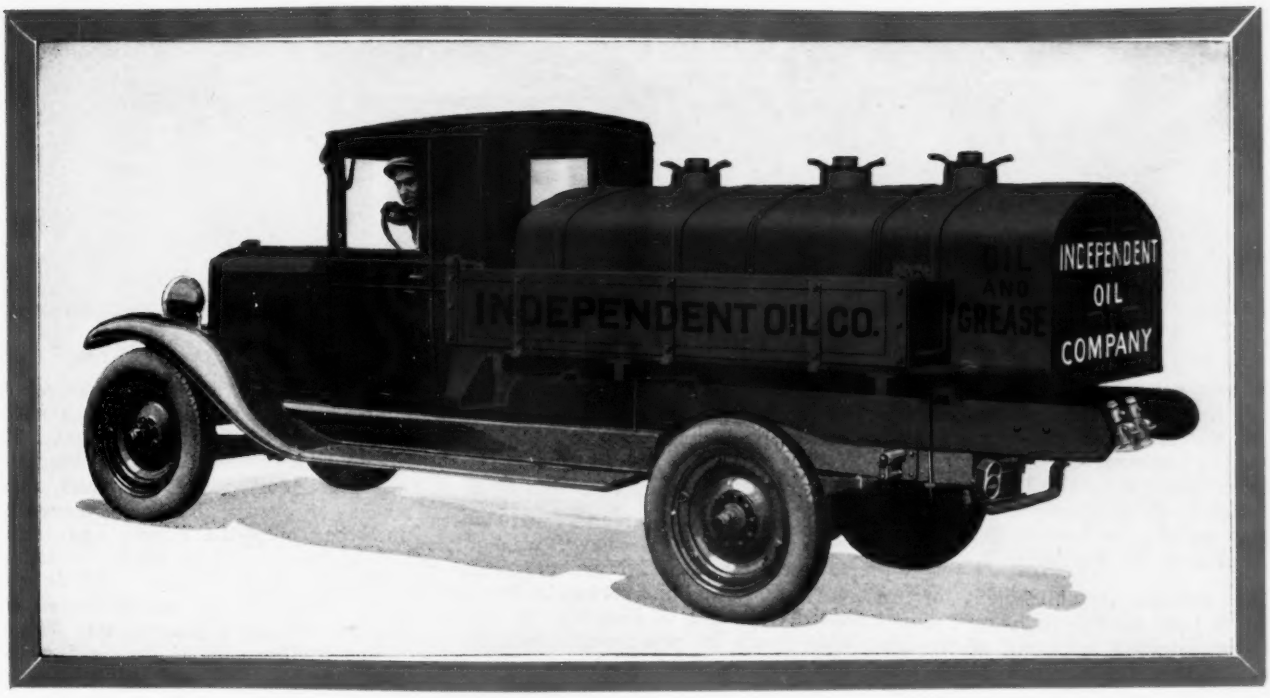
If the container is placed in a closed cabinet inside of a warm station the small amount of liquid in the container will vaporize in the can, and if the container becomes warm enough will drive vapors out of the can that may be ignited from a spark from the compressor motor or any other source. The empty container is more dangerous than the proverbial empty gun.

Protect Against Blow-Outs

Blow outs when giving tire service have caused many bruises and lacerations but the most severe and dangerous injuries have been to the ears and the eyes. By placing the fender between you and the tire that you are filling the fender is a protection against flying particles and leaves but a small part of the forearm exposed should a rim blow off.

When it is impossible to use the fender as protection as when the valve is stopped at the bottom of the wheel apply the air gauge at arm's length and turn the face away to protect the eyes and ears from a sudden release of pressure or flying particles.

Under no circumstances should the "Servicing Salesman" take a position under the car as is apparently necessary in the case of some old disk wheels where the tire valves are inconveniently reached from the outside. Jack up the wheels so that the valves can be positioned where they can be reached either from the front or rear and the outside, or move the car for the same purpose, or use a lift if available.



BUTLER TRUCK TANKS

This is one of the pictures displayed in a new Butler Truck Tank Bulletin which features the latest developments in truck tanks for trucks in the popular price range.

With your copy we will send complete price information on the tanks, any size, which you are needing or will be needing. Write today about tomorrow's requirements.

From the days of the tank wagon, the name Butler has stood for the utmost that was and is practical in truck tank construction.

The natural strength of plate steel is multiplied by Butler forming and welding and attains its maximum strength per pound. The tank is cushioned on a sturdy steel understructure which distributes the load uniformly on the chassis and carries it low. Performance is inwrought in every detail of design and construction. It is because of outstanding performance that Butler Truck Tanks are repeatedly chosen by a majority of oil marketing companies.

Prompt shipment. What size tanks are you needing next?

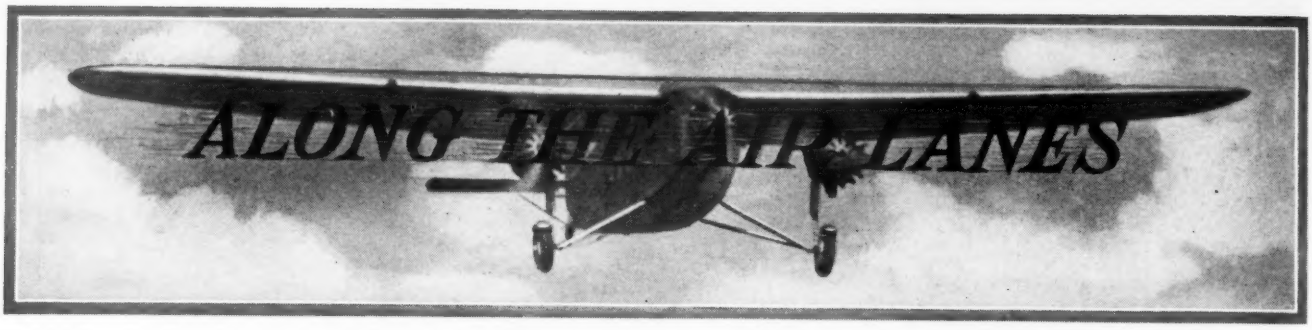
Butler Products

- Ready Made Buildings
- Bolted and Welded Oil Field Tanks
- Truck Tanks
- Welded Storage Tanks (above and underground)
- Visible Measuring Pumps
- Barrels, Buckets, Cans, Funnels
- Pipe for conduit, well casing and other purposes

BUTLER MANUFACTURING CO.

KANSAS CITY, MISSOURI — MINNEAPOLIS, MINNESOTA

STEEL BUTLER PRODUCTS



A new note, literally, was added to New England oil territory recently when the drone of the new twin-engined, 10-passenger, Sikorsky Amphibion plane of the Pan American Petroleum & Transport Corp., was heard on its non-stop flight from Long Island to Portland, Me.

The possible establishment of an aviation base for the company's planes in New England was one of the objects of this flight. The plane also visited the largest centers of operation of the Mexican Petroleum Corp., Pan American subsidiary in this territory. The Mexican company operates 16 bulk distributing plants in New England, outside of those in Boston, Providence, Springfield, Hartford and New Haven, and a large chain of service stations through the territory.

The plane has a top speed of 130 miles per hour and a cruising speed of 115 miles. It has two interior cabin seating arrangements, one with regular wicker chairs, and a second of sofas, tables, and movable chairs.

It is the first of the Sikorsky "Series A" land-and-water ships. In addition to the new gasoline capacity of 330 gallons, the two engines have been moved forward about 10 inches, affording increased visability to the pilot. The engines are 440 horsepower. Wasp radial air-cooled type.

These officials of the Mexican Petroleum Corp. were passengers on the initial flight: G. C. Stein, sales manager; M. J. Reynolds, superintendent of operations; and Kenneth Rothermel, advertising manager.

Former U. S. Navy men were at the controls during this flight. C. D. Kirkeby, war aviator and for 10 years instructor with the navy, was pilot, assisted by W. B. Murphy, formerly navy pilot and instructor in commercial aviation, J. J. Maloney, who spent nine years in experimental squadrons and scouting fleets with the navy, was mechanic.

The plane may fly southward soon to survey southern properties of the company's subsidiary there.

* * *

E. J. Sadler, a production executive with the Standard Oil Co. of New Jersey, tells the following story of an unusual forced landing of one of his company's planes.

This plane making the trip from the Mid-Continent to El Paso, found it necessary to make a landing after dark. Towns are few and far between in this section, but the pilot spotted a light in the railroad station at a small town and dropped down to give an S.O.S.

The train despatcher took in the situation and quickly rounded up a few cars which drove to the golf course and arranged themselves so the plane could pick a landing within the area marked by their lights. The plane came down. It so happened that the despatcher who had taken the emergency in hand had driven his own car onto the course and turned off his lights. The plane settled on the improvised landing field only to land on top of this one unlighted car. As Mr. Sadler expressed it: "It did about $200 worth of damages to the car, several thousand to the plane, but inasmuch as neither the pilot or passenger were badly hurt we thought the outfit got off pretty lucky.

* * *

The "Patrician," claimed to be the country's largest passenger plane, and Col. Charles A. Lindbergh, crossed paths in Los Angeles recently at the end of that plane's transcontinental hop. Union Oil Co. representatives were on hand to greet Col. Lindbergh when he arrived here to inspect the Grand Central Air Terminal at Glendale, the western terminus of Transcontinental Air Transport, for which he is technical advisor. He later flew the plane from Los Angeles to San Francisco, with 12 passengers aboard.

The "Patrician" is a 20-passenger plane, owned by the Keystone Aircraft Corp., Bristol, Pa. On its transcontinental flight, it was fueled by products of the Union Oil Co. from the time it reached El Paso, Tex., where it was met by Warren E. Carey, southern California aviation representative of the Union company, and by Donald E. Forker, director of publicity, until it left Salt Lake City, enroute to Minneapolis.

Mr. Carey, flying one of the Union company's Eagle-rock planes, escorted the big ship into Phoenix, and from there to Los Angeles.

New "Series A" Sikorsky Amphibian plane purchased by Pan American Petroleum & Transport Corp.

ACCURACY

Write for information about the full line of G & B pumps. Bulletin T-176 describes the sight measure nozzle control types. Bulletin T-179 explains the mechanical measure model.

To insure unerring accuracy in all types of G & B measuring pumps many safeguards have been designed, patented and built in by the manufacturers. No G & B pump leaves the plant until it is tested and re-tested many times for accuracy. Each important unit in the assembly is inspected by expert workmen before and after it is fitted into its place. Such pains are not without purpose. Sealers of weights and measures and regular inspectors find no fault with G & B pump construction. And when a G & B pump serves a ten-gallon sale you can be sure it has measured accurately.

GILBERT AND BARKER
MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD MASS.

"Pumps for Every Station Need"

W. L. Stewart, Jr., a director of the Union, was one of the passengers on the Los Angeles-San Francisco flight.

* * *

This is possible through the completion of the lighting of the Salt Lake City-San Francisco section of the airway. Mail placed in Cleveland or Toledo now at the close of business Monday, instead of early afternoon, starts for the west coast that night, arriving at San Francisco Wednesday morning at the opening of business.

Similar advantages will obtain for eastbound mail from the Pacific Coast.

* * *

The present S-38 type airplane made by the Sikorsky Aviation Corp., Long Island, N. Y. is used by many commercial aviation companies, among those being the Curtiss Flying Service, Western Air Express, Colonial Airways, Inc., Inter-Island Airways, Inc., and also the U. S. Navy.

One operated by the American International Airways, with a wing spread of 101 feet, will soon embark on a 5000 mile non-stop flight from this country to Santiago, Chile, preparatory to the establishment of a mail and passenger line by that company between Panama and Chile.

* * *

The progress and development of aviation during 1928 in the United States, and in the rest of the world, is reviewed at length in the eleventh annual edition of the Aircraft Year Book, published by the Aeronautical Chamber of Commerce of America, Inc., 300 Madison Ave., New York City.

Its 484 pages are devoted to about every kind of information on aeronautics, ranging from a discussion of air transport trends to technical drawings of planes and engines.

One of the outstanding achievements during the past year, the book points out, was the passing of air transport from individual experiment to that of corporation endeavor, and the operation of aircraft on regularly scheduled routes as a public service.

Detailed statistics on airplane operation are included. These indicate that at the end of 1928 there were 48 airways in the country, having a combined length of 20,000 miles, and linking together 368 cities. Air lines carried 3,632,059 pounds of mail last year, as against 1,222,843 pounds in 1927, and 52,934 passengers, as against 12,594 passengers in 1927, and 5782 in 1926.

A total of 10,472,024 miles were flown in commercial flight in 1928 in this country, compared with 5,242,839 miles in 1927.

Compensation for mail carried in 1928 was $6,105,247 and miles flown in air mail service were 6,779,475.

New Equipment

Standard Lock & Measure Co., 71 Broadway, New York, has devised the Insuralok, a new lock for supply tanks, truck tanks and drums, to protect against theft, tampering and evaporation of oils. This device can be obtained as a combination lock or a key lock. It is equipped with built-in measuring rod, which permits accurate measuring of contents without unlocking tank. The lock is powerfully constructed to discourage prying hands, and is airtight, the company says.

* * *

Milwaukee Tank Works has elected Robert L. Bienenstok president and treasurer, and A. J. Boerger vice-president and secretary. Mr. Bienenstok was one of the founders of the company, 18 years ago and acted as vice-president up to this time, and Mr. Boerger was general superintendent for the past 14 years.

* * *

The Campbell Engineering Co., Newark, N. J., announce the following agency appointments: George B. Allan & Co., 405 **North Texas bldg.,** Dallas; L. E. Pollard, Oliver bldg., Pittsburgh; W. R. Simpson, Willard hotel, Tulsa, and W. B. Tardy, 74 Knickerbocker bldg., Baltimore.

* * *

The Cook Electric Heating Co., 717 Frankfort Ave., Cleveland, Ohio, has designed a new compact type of water heater for service stations and rest rooms. The heater uses electric current only.

It is attached on the regular water line below a lavatory and requires no storage tank. The manufacturers claim it to be economical in operation and especially desirable for service stations because it may be used safely.

* * *

A. O. Smith Corp., Milwaukee, Wis., has published bulletin No. 501 on welding for the oil industry. The bulletin states that welded construction is unlimited in its adaptability and tells how oil cracking stills, by the welding process, can be made in sizes limited only by transportation requirements.

* * *

Blackmer Rotary Pump Co., 1801-B Century Ave., Grand Rapids, Mich., has transferred Harry A. Haas, formerly district sales manager at Atlanta, Ga., to a similar position at the company's Pittsburgh, Pa., offices in the Oliver Bldg.

* * *

Reading Iron Co., Reading, Pa., has moved its general sales offices from the Baer Bldg., Reading, to the recently completed New York Central Bldg., 230 Park Ave., New York City, effective April 30. All sales matters will be handled henceforth at the New York City address.

* * *

The Pressed Steel Tank Co., Milwaukee, has purchased the assets of the Seamless Steel Products Corp., Milwaukee. The latter company makes cylinders, tanks, Kantainers and other seamless steel products. Its business will henceforth be operated by the Pressed Steel company as a wholly-owned subsidiary. No change in personnel of either company will take place for the present.

* * *

The Columbian Steel Tank Co., Kansas City, had the distinction of manufacturing the first bolted tanks of A. P. I. specifications. Ten of the 1000-gallon size were fabricated early this year for the Service Tank Co., of Ardmore, Oklahoma, and were erected in Oklahoma City. A few days later two 5000-barrel tanks of A. P. I. specifications were fabricated for the same company.

* * *

The Dill Mfg. Co., Cleveland, O., has off the press a new tire valve specification chart which shows standard valve practices adopted by the Tire & Rim Association of America, Inc. It is designed for use where modern tire service is provided and can be hung on the wall.

* * *

Flexlume Corp., Buffalo, N. Y., has added the Neon gas tube illumination to its line of Flexlume electric signs. Electrical connections are automatic, high voltage wires are not touched and terminals are weatherproof, the company claims.

Flexlume designs now include signs illuminated with exposed lamps, neon electric tubes, raised white glass letters and combinations of these three effects.

* * *

Dearborn Chemical Co. moved its New York offices to new and larger offices at 205 East 42nd St., New York, on April 15. Headquarters are at Chicago.

* * *

Nail Hazard Eliminated

CLEVELAND, May 11.—After a series of foot pucture accidents four years ago at its Toledo refinery the Standard Oil Co. of Ohio, issued an order that all nails must be pulled or bent over when temporary scaffolding was taken down or other pieces of lumber laid on the ground. Since that order was signed by Supt. G. W. Hanneken there have been no more accidents of that character, according to the current news letter of the National Safety Council.

The Location and Not the Building Is Important, Jobber Says

Approaching the station from the east, the motorist can go through it easier than around it. He has to slow down anyway to make the turn and cross the viaduct at the right of the picture

By Ward K. Halbert
N. P. N. STAFF WRITER

VICKSBURG, Miss.

MONEY spent in building filling stations is often wasted on unimportant details, to the utter neglect of features that attract business. This is the opinion of E. C. Neal, a Mississippi jobber who says that costly real estate, expensive building material and fancy architecture are extravagances that do not pay returns on the investment.

"Features that count are convenient accessibility to fast moving cars, modern toilet rooms properly advertised along the road and clean, orderly premises," he says. Of course he admits that a good location is valuable to any service station but he insists that a good location is not always high in dollars per front foot.

A few months ago Mr. Neal, who is head of the Home Oil Co. of Vicksburg, bought an unsightly, rough piece of ground, shaped like a half moon, two miles east from the heart of town. It fronted on U. S. Highway 80, connecting Vicksburg and Jackson, Miss., but it was a hill and the back border of it was a deep railroad cut.

The hill was big enough that two families of negroes had built their homes on top of it and had a garden. It measured nearly 550 feet around the long, curved side that bordered the road and was 80 feet deep at the widest place. The fact that it had two negro huts on it indicates the remote character of the neighborhood.

As soon as he came into possession of it, Mr. Neal leveled the hill to the road grade with a steam shovel and laid a crescent-shaped, concrete slab by the roadside. (Highway 80 is a finished, hard-surface road but not paved.) The slab is 350 feet long and contains 6000 square feet of concrete. The cost was $1500 for the concrete work and nearly that much for the grading.

Moving the 6000 cubic yards of earth and laying the 6000 square feet of concrete drive, exceeded the cost of the service station building. The close-up view of it in an accompanying picture shows it to be a frame structure with a composition roof. The walls are boarded up and the cracks are covered with strips. The building is comfortable but certainly not extravagant.

If Mr. Neal had seen fit to build this station a few yards farther down the road he could have done so at a great saving. The entire expense of moving dirt could have been eliminated. Most of the cost of the concrete work could have been saved. Besides, by going a little farther out, the station would have been more than a mile from the city limits and that technicality would have reduced the annual license fees from $15 to $5 per pump.

But Mr. Neal did not consider those economies worth the sacrifice although he did refuse to build a fancy brick station. "Housekeeping and general orderly appearance of a place have more influence to bring people into a station than fine construction," he says. "But the biggest inducement is an easy, comfortable approach."

EXAMINING the picture on the first page of this article, it will be seen what Mr. Neal considers a desirable approach to a service station. Obviously it is easier for any motorist to drive through this filling station than around it, and yet it is not in the road. The pumps are two car widths from the highway as surveyed and built before the hill was removed.

The curve was made wide so a motorist might make a complete right turn across the railroad without losing too much speed. The viaduct over the railroad cut is visible at the extreme right of the picture, behind the station. A few feet beyond that bridge, the motorist drives under an arch and into the National Park that occupies the ground on which the Battle of Vicksburg was fought

"Toilet facilities get more business than any other possible appeal to tourists," the owner of this station says. "The woman in charge of the lunch room inside serves good food but the tourist never knows that before he stops"

during the Civil War. It is one of the state's show places, lavishly adorned with statuary and monuments erected by states whose troops took part in the battle.

Of course there are no service stations in this park, so Mr. Neal's station has no competition between it and town, for Vicksburg is at the west side of the park and, beyond Vicksburg, the Mississippi river. Practically every bit of east-and-west traffic that crosses the river by ferry at Vicksburg, passes this station and when the Vicksburg bridge is completed (more than a year from now) the traffic stream will be much heavier.

"TRAFFIC is not like it used to be," Mr. Neal points out. "Motors rush along the well graded roads at 35 to 45 miles an hour. Unless a motorist actually needs gasoline or some other service he is not going to slow down to make a sharp turn into a filling station. But if he can get into the station easier than he can avoid it, he is much more likely to stop there and buy what he needs."

This station has the additional advantage of being on a curve. Motorists have to slow down to take it. Before the hill was removed they could not see the bridge over the railroad from the point where the picture was made. The spot has been the scene of more than one tragedy, so Mr. Neal improved the public safety by making the viaduct visible.

"An ordinary, highway filling station can reasonably expect one car to stop out of every 20 that pass," Mr. Neal says, "and if a station expects more than one car out of 20 to stop it must be something extraordinary. It must offer a good reason, or an inducement to stop.

"The Vicksburg-Jackson road," he says, "averages one car a minute all year. If this station is no better and no worse than the average it may expect to serve about three cars an hour during those hours it is open for business. But a count has shown that it is actually getting more customers than that now. Chances are it will do much better, later in the season. It was opened in the winter when the road does not average a car a minute, and it has not yet become a fixture in the minds of local motorists."

When the public gets acquainted with the new station it is entitled to considerable business from townspeople because it is close to Vicksburg's most popular drive—through National Park, and less than a mile from the better part of the residence section. Moreover, Vicksburg is one town in the United States that is not over-built with filling stations. And here is why:

Vicksburg is hilly and the hills are steep. The town is jokingly called the necessity that mothered the four-wheel brake. Driving from the main business street toward the river conveys the same sensation as riding a roller-coaster. Naturally suitable locations for drive-in filling stations are scarcer than in most towns. Besides, it is an old city and real estate is rather firmly held in small parcels, and closely built somewhat like eastern towns.

"Toilet equipment is the second item an oil man can not afford to economize on when he builds a station," Mr. Neal says. "Ask anybody who ever toured with a family and he will tell you what makes him select a filling station to stop in. It is the assurance that rest rooms are convenient and outward evidence that they will be found fit for occupancy."

He has carried out this theory in the construction of this new distributing point. The ladies' rest room is plainly marked on the window at the side of the building and on the door in front. Anybody who can read needs to ask no questions. Moreover it is perfectly clean and attractive inside. There are no decorations. No money was spent on rugs and pictures and lacquered furniture, but the best of modern plumbing was installed.

PERSONS who work at the station have explicit instructions to clean the toilet rooms (not daily or twice a day) every time any customer enters one. Their immaculate condition is constant. As soon as one of them is used and the motorist has departed, a responsible person in charge of the station enters and inspects it. Then the room gets whatever it needs to make it fresh like the bath room in the home of the most fastidious customer.

The words "Rest Room" feature

the station's advertising. Two 6 x 10-foot signs have been placed on the highway, one in each direction from the station, and the rest room is the first item mentioned. Products for sale at the station are mentioned secondarily. The three-line bill board reads like this:

LADIES' REST ROOM
Crystal Ethyl Gasoline
Quaker State Motor Oil

The lettering is big enough that "he who races may read," and the signs so situated that the motorist who reads and is interested can heed them. Approaching on the "straight away," the sign is 200 feet from the station—about 150 feet from the curve in which the station is located. That gives the driver time to bring his machine to a graceful stop.

ON THE bend in the road, the sign is only 125 feet from the station. The theory is that any motorist crossing the viaduct, which leads directly into a curve in the road, will not be speeding. His car will be under perfect control.

The signs on the window of the station and on the board suspended from the canopy, are not there for the driver's benefit. The driver usually watches signs so placed that he can see them without taking his eye off the road. The high signs are for the enlightenment of other persons in the car. If a passenger sees one of these and is interested, there should still be time for that passenger to notify the driver. For that reason the "Rest Room" markers on the station are large and plain black and white.

"A great many highway oil stations are 'joints,'" Mr. Neal says, "but more of them look like it than actually are. It is because the people who conduct them have no taste. They permit the place to become littered with junk. They allow any passing salesman to tack up unsightly signs. They let dust settle on the pump globes and window glass and stay there until the place looks dingy.

"To overcome that, I used the greatest of care in picking somebody to handle this station. It is in charge of a woman of taste and ability. She has help there that she can handle, menial and otherwise. I could have gotten more rent for the establishment than it is earning now but I prefer to sacrifice on the rent item and make it back on the volume of sales; and volume of sales can not be built up in a place that looks like a junk yard.

"As soon as the dust begins to be a nuisance, we have 1000 gallons of crank case drainings saved up to oil the road in front of the whole property from the viaduct, around the curve.

1879 GOLDEN ANNIVERSARY YEAR 1929

100% Pennsylvania Motor Oils

—*with an "extra" which costs you nothing*

You get an "extra" when you contract for FREEDOM 100% Pennsylvania Motor Oils—it costs you nothing.

The "extra" is that you get the product of an organization 50 years old this year—an organization which has *specialized* in the study and refining of 100% Pennsylvania Crude.

This line of motor oils is the blend of highly refined products from two FREEDOM refineries—460-470 flash Bright Stock (Sharples process) refined at the Coraopolis plant—100% Pennsylvania Crude high flash Neutrals refined at the FREEDOM plant.

FREEDOM 100% Pennsylvania Motor Oils will please your customers and help expand your business. A half century of fair dealing guarantees it.

Write for quotations. Immediate shipment can be made in tank cars, compartment tank cars, barrels, or drums.

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 31

Also available for immediate shipment

460-470 flash, minimum 85 Visc., low cold test Bright Stock (Sharples process).

FREEDOM 100% Pennsylvania Crude high flash Neutrals.

100% Pennsylvania Motor Oils, blended to your own specifications from FREEDOM 460-470 Bright Stock and FREEDOM 100% Pennsylvania Crude high flash Neutrals.

FREEDOM 600 Steam Refined.

FREEDOM filtered low end point Kerosene.

THE FREEDOM OIL WORKS COMPANY
Freedom, Penna.
Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

Greasing

21 articles in National Petroleum News, published since the first of 1928, have been devoted exclusively to telling how to grease cars properly and profitably. How to build greasing stations and how successful companies sell their grease, are also told in these stories.
Here they are for your file reference:

1929

Takes lubrication to farm trade — Apr. 24, p. 104
Handbook on chassis greasing — Apr. 17, p. 110
Open air greasing stations in California — Apr. 10, p. 92
Thoro lubrication for car—what to grease — March 20, p. 178
Gives men grease sale profits — March 20, p. 184
I. O. M. A. lubrication chart — March 6, p. 94
Boosts grease sales with parades, radio — Feb. 27, p. 98
Speed, thoroness in lubritorium — Feb. 13, p. 96
Car greasing profits lost at most stations — Jan. 30, p. 75
Something about auto greases — Jan. 30, p. 76
Grease pit housed in style — Jan. 23, p. 72
Selling industrial greases — Jan. 16, p. 87

1928

Changes in greasing system of new models — Nov. 21, p. 74
Station sells 7500 lbs. grease in one season — Oct. 31, p. 32
Proper greasing of cars brings profits — Aug. 22, p. 71
Grease salesman tells how to sell it — July 18, p. 81
Chassis greasing profits hardly scratched — June 13, p. 21
Greasing success means good merchandising — May 30, p. 53
How car lubrication adds to profits — May 23, p. 19
Grease station designed after year's travel — May 16, p. 25
Keeping steady customers at grease stations — Feb. 1, p. 29

The above list of articles is for your convenience in locating them in your file.
If you wish extra back copies, we shall be glad to supply them at 25c a copy. However, our stock of back numbers is limited and we are entirely out of some issues.
On numbers that are exhausted, we can have photostat copies made of the pages you wish at a cost of 40c per page, negative proof.
Libraries in the larger cities generally keep back files of National Petroleum News complete.

National Petroleum News
Main Office: 1213 West Third St.
Cleveland, Ohio

The land occupied by this station used to be a hill that obstructed vision more than the station. The building cost less than the combined bills for leveling the lot and laying the concrete slab

And when the season is right we are going to landscape the station. It is not going to be an expensive job of artistry, but we are going to decorate the lot with five-year old pecan trees and they will give it a wooded appearance in a few months and materially enhance the value of the property."

Another feature that Mr. Neal considers an advantage to the location of the station is the fact that it is at a fork in the road. Not that road forks are always advantageous to a station, but this one promises to bring business because the side road will be used largely by Vicksburg people. It leads to an 18-hole golf course, a mile south of the station.

Coming across the viaduct, a motorist may turn the curve to the left and follow the course of Highway 80, or he may make a less radical turn into the side road and go to the golf course. That circumstance makes Mr. Neal's new station the closest one to any motorist who starts from Vicksburg to the country club.

Illustrating the steep aspect of Vicksburg streets; Mr. Neal has a complete gravity flow system through his bulk plant. Although the warehouse and office are on Levee street, within a few feet of the Mississippi river, there has been no occasion to receive gasoline by barge because the freight rate from Shreveport in only 1.35 cents a gallon. Consequently all shipments are received by tank car.

The side track where these cars are unloaded is 12 feet above the storage tanks. The tanks themselves are 40 feet above the warehouse and it is the custom at the plant to close six valves on the gasoline line to keep it from leaking at night.

Proximity to the river brings the company little business. A variety of river craft use gasoline for fuel. The fishing boats that have comparatively small storage buy at retail. They purchase their gasoline from floating merchantile establishments, moored along the river banks near town where they buy their groceries and meat and where also they sell their fish daily. The floating stores buy gasoline from tank truck and operate on the regular dealer's margin.

New Patents

Prepared by R. E. Burnham, patent and trademark attorney, Continental Trust Building, Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

April 23, 1929

REFINING

Distillation of oils—Albert G. Peterkin, Jr., Bryn Mawr, William F. Stroud, Jr., Cynwyd, and Richard B. Chillas, Jr., Philadelphia, Pa., assignors to Atlantic Refining Co., Philadelphia. No. 1,709,874.

Process for treating hydrocarbon oil—Jacque C. Morrell, Chicago, Ill., assignor to Universal Oil Products Co., same place. Filed Aug. 31, 1922. No. 1,710,063.

Process for fractionally distilling hydrocarbons—Robert T. Pollock, Boston, Mass., assignor to Universal Oil Products Co., Chicago, Ill. Filed April 11, 1921. No. 1,710,068.

Process of treating hydrocarbons—John C. Black and Marvin L. Chappell, Los Angeles, Cal., assignors to Pan American Petroleum Co., same place. Filed April 6, 1927. No. 1,710,143.

Process and apparatus for treating hydrocarbons—Gustav Egloff, Independence, Kans., assignor to Universal Oil Products Co., Chicago, Ill. Filed Jan. 14, 1920. No. 1,710,152.

Process for cracking hydrocarbon oils to produce light oils—Gustav Egloff and Harry P.

Benner, Chicago, Ill., assignors to Universal Oil Products Co., same place. Filed June 28, 1920. No. 1,710,153.

Apparatus for treating emulsified oil—Gustav Egloff and Harry P. Benner, Chicago, Ill., assignors to Universal Oil Products Co., same place. Filed Oct. 23, 1920. No. 1,710,154.

Process and apparatus for forming oxidation products of hydrocarbon oils—Gustav Egloff and Jacque C. Morrell, Chicago, Ill., assignors to Universal Oil Products Co., same place. Filed July 20, 1922. No. 1,710,155.

Process for treating hydrocarbon oils—John C. Black and Marvin L. Chappell, Los Angeles, Cal., assignors to Pan American Petroleum Co., same place. Filed March 10, 1927. No. 1,710,200.

Process of purifying hydrocarbons—John C. Black and Marvin L. Chappell, Los Angeles, Cal., assignors to Pan American Petroleum Co., same place. Filed May 28, 1927. No. 1,710,201.

Distillation of lubricating stock—Albert G. Peterkin, Jr., Bryn Mawr, William F. Stroud, Jr., Cynwyd, and Richard B. Chillas, Jr., Philadelphia, Pa., assignors to Atlantic Refining Co., Philadelphia. Filed April 14, 1926. No. 1,710,240.

Art of distilling oils—Edgar M. Clark, New York, N. Y., and Frank A. Howard, Elizabeth, N. J., assignors to Standard Oil Development Co. Filed Dec. 24, 1920. No. 1,710,404.

PRODUCTION

Well-formation-testing device—Edgar C. Johnston, El Dorado, Ark., assignor to Johnston Formation Testing Corporation, same place. Filed March 23, 1927. No. 1,709,940.

Automatic self-control blow-out preventer—Chester A. Rasmussen, Long Beach, and William A. Trout, Los Angeles, Cal. Filed Oct. 11, 1927. No. 1,709,949.

Packer—William H. Burstall, Huntington Park, Cal. Filed Feb. 27, 1928. No. 1,710,203.

Float-vale—Loyd F. Defenbaugh, Compton, Cal. Filed June 12, 1925. No. 1,710,410.

Filter for well-screens—William H. Cater, Chicago, Ill. Filed April 27, 1925. No. 1,710,471.

Rotary underreamer—George F. Le Bus, Electra, Tex. Filed May 3, 1927. No. 1,710,580.

Sand-tester pump—George F. Le Bus, Electro, Tex. Filed Aug. 8, 1927. No. 1,710,581.

Pump-jack-assembly—Cloise H. Baldwin, Fort Worth, Tex., assignor to Texas Steel Co., same place. Filed Feb. 14, 1927. No. 1,710,602.

Gas and sand trap for oil-well equipment—John D. Brady, El Dorado, Ark. Filed Aug. 29, 1925. No. 1,710,606.

Oil-well device—Anthony C. Brammer, Wichita, Kans. Filed July 21, 1927. No. 1,710,653.

MISCELLANEOUS

Method of manufacturing well-points—George E. Mirfield, Youngstown, Ohio, assignor to Youngstown Sheet & Tube Co., same place. Filed Jan. 2, 1925. No. 1,709,998.

April 30, 1929

REFINING

Purification of Tar-acid-bearing oils—Solomon Caplan, Brooklyn, N. Y., assignor to Combustion Utilities Corporation, New York, N. Y. Filed Sept. 29, 1924. No. 1,710,764.

Apparatus for the treatment of liquid hydrocarbons—Samuel J. M. Auld, Albert E. Dunstan, and Percy H. Herring, Sunbury-on-Thames, England, assignors to Anglo-Persian Oil Co., Ltd., London, England. Filed Feb. 11, 1924. No. 1,711,219.

Art of cracking hydrocarbons—Edward W. Isom, Scarsdale, N. Y., assignor to Sinclair Refining Co., New York, N. Y. Filed July 21, 1927. No. 1,711,351.

Process of treating benzol to eliminate corrosive properties—Theodore R. Trainor, Wilson, Pa. Filed April 30, 1927. No. 1,711,367.

PRODUCTION

Pressure lift for oil-wells—William McCarty, Alhambra, Tex. Filed May 12, 1928. No. 1,710,937.

Underreamer for wells—William P. Rudkin, Oklahoma City, Okla. Filed June 4, 1927. No. 1,710,998.

Well-casing pump—Fred Davis, Berkeley, Cal. Filed May 5, 1927. No. 1,711,045.

Deep-well pump—Robert L. Dennison, Kansas City, Mo. Filed Jan. 20, 1927. No. 1,711,086.

Sand-tester—Turner A. Owen, Long Beach Cal. Filed Feb. 11, 1928. No. 1,711,125.

MISCELLANEOUS

Liquid measuring and dispensing apparatus—William F. Brandt, Fort Wayne, Ind., assignor to Wayne Co., same place. Filed April 18, 1927. No. 1,710,917.

Liquid-dispensing apparatus—Thomas B. Smith, Pinewood, S. C. Filed Oct. 21, 1926. No. 1,711,331.

PUREPENNSYLVANIA MOTOR OIL

THE LIFE OF MOTORS
PENNA.
INVINCIBLE
MOTOR OIL
A. D. MILLER SONS' CO.
PITTSBURGH, PA.

THE LIFE OF MOTORS
CHATTERLESS
CASTOR-OIL
MOTOR OIL
A. D. MILLER SONS' CO.
PITTSBURGH, PA.

A. D. MILLER SONS' CO. *Established 1862* Pittsburgh, Pa.

Make This Extra Profit With

Rotary Lift

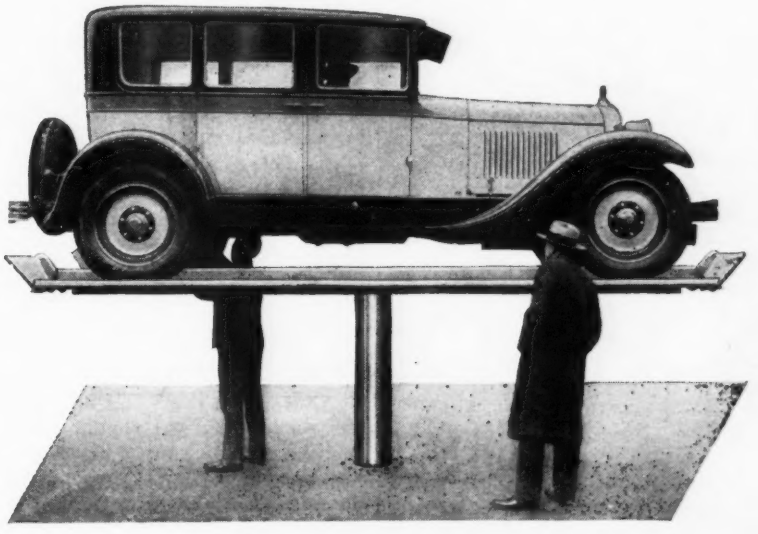
The big demand for quick adjustment, inspection and service jobs during the touring season gives you an unusual opportunity to make a bigger profit from Rotary Lift service. Motorists are invariably in a hurry and prefer to get all the service their cars need when they stop for gas and oil. This complete service requires a lift for speed and thoroughness which gives you a chance to make an extra profit from Rotary Lift service.

Equip your station with Rotary Lift now and start making this extra profit at once.

Write for bulletin.

Automobile Rotary Lift Co.

MEMPHIS, TENN.



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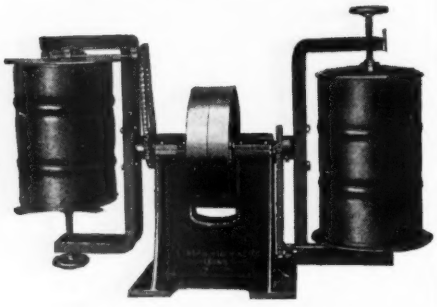


***New Eureka Way is* CHEAPER *and* BETTER**

With the new Eureka Double Action Drum Washer you can thoroughly clean drums and barrels at the lowest possible cost. Some of the large savings made over old methods seem incredible. On the average job we can save from 100% to 400% and under some conditions have done much better.

Write for Special Circular.

EUREKA MACHINE CO.
2605 Vega Ave. Cleveland, Ohio

THE CASH CUSTOMER IS ANYBODY'S CUSTOMER . . . . .

He buys five gallons here and five there—in the nearest station. Sell him a coupon book and you may be sure he will concentrate his purchases in your stations, buy larger quantities.

An Allison Coupon Book of course! You pay nothing extra for their exactness, neatness and general good workmanship. Ask us for full information, samples and prices.

ALLISON COUPON CO.
INDIANAPOLIS, IND.
SINCE 1888

Comments by Distributors On Code of Ethics

Comments on our industry's proposed code of ethics from a large number of companies engaged in marketing were published in the Mar. 13 issue of NATIONAL PETROLEUM NEWS, beginning on Page 83. The replies were in response to a letter of inquiry. Following are a number of additional comments which have been received since Mar. 13:

Walter M. McGee, vice president, Vacuum Oil Co., New York: "This company was represented at the conference which was held at St. Louis in February, and it was our understanding that the code would not become effective until after approval by the Federal Trade Commission; and we prefer to await such approval before making the adoption of the code final."

J. Howard Pew, president, Sun Oil Co., Philadelphia: "We have strictly adhered to the Ten Points since the Chicago meeting and, in fact, have observed them for a considerable period before that time. We expect to continue to follow out our present policy in this respect, unless our competitors should force us to follow a different course."

H. G. Chase, Secretary to Mr. Dawes, president, The Pure Oil Co., Chicago: "As far as this company is concerned, we are already adhering to the main essentials of the code."

D. E. Buchanan, vice-president, Chestnut & Smith Corp., Tulsa: "The rule with reference to the installation of dispensing and storage equipment at airports is about the only thing in the code with which this company is directly concerned and we are enforcing that rule religiously."

Henry D. Frueauff, Henry L. Doherty & Co., New York City: "Your letter to Mr. Doherty has been referred to this department. We certainly trust that your campaign will be made effective. We have been working on its application even further than you have gone ever since the code was discussed and approved at Chicago. There is no reason in the world why we should be so unbusiness like in our operations as to continue in effect a great many of the practices that are so abhorent at this time."

M. G. Eitelman, vice-president, Barnsdall Refining Co., Kansas City: "The ten points referred to by you are and always have been complied with by us, with two exceptions—namely, paying rentals for the privilege of installing pumps and giving away oil on opening days of new service stations. These two practices were discontinued as of October 1, last year, consequently without any change whatsoever in our policies the ten points mentioned by you are being strictly adhered to and I trust the plan set out by you as a part of the recent code of practices will be adopted by every other marketer throughout the country."

Frank B. Fretter, president, The National Refining Co., Cleveland: "This company has not done any of the things, up to the present time, covered by the ten points referred to under "Better Practices."

Geo. B. Cramer, The Powerine Co., Denver: "Have always conducted our business along these points."

D. G. Gray, The Dale Oil & Refining Co., Wichita Falls, Tex: "Adopted in full by us on Jan. 1, 1929."

W. E. Thomas, Navy Gas & Supply Co., Denver: "Would be glad to comply with code but competitors would also have to agree."

A. B. Caldwell, vice-president, Caldwell & Taylor, Inc., Cincinnati: "We prefer to put these points in effect simultaneously with the other oil marketing companies."

The following companies report that they have in the past and will in the future continue to observe the ten points:

Lewistown Oil & Refining Co., Lewistown, Mont.

L. H. Martin, Inc., Greensboro, N. C.

Northwood Oil Co., Northwood, N. D.

Clatonia Oil Co., Clatonia, N. D.

The Cincinnati Oil Works Co., Cincinnati, O.

Chadwick Oil Co., Chadwick, Ill.

CHICAGO, May 10.—The Henry H. Cross Co., Chicago, held its third annual dinner-dance for employes and their guests at the Edgewater Beach hotel April 23. Covers were laid for 108. Cross company employes from Tulsa, Los Angeles and Smackover, Ark. were present.

Laboratory Tests Posted at All 'Certified' Gasoline Stations

By Paul Wagner
N. P. N. STAFF WRITER

LOS ANGELES

MOTOR fuel marketed under the trademark of "Certified" in Southern California reaches the buying public with the stamp of the Los Angeles Testing Laboratory on it.

In any of the service stations supplied by the Edington Gasoline & Refining Co., Los Angeles, there may be found laboratory reports taken every week on samples obtained from the firm's Long Beach refinery, its Los Angeles bulk plant or from one of the several hundred resale stations handling its gasoline.

The report shows, according to Harry J. Witz of the company, a complete range of boiling points in addition to the results of tests for corrosion, color, water and suspended matter.

No control is permitted the company over the manner or place of taking samples, the testing laboratory varying this work from week to week. In that manner the laboratory, headed by Dr. Roy Cross as president, undertakes to keep a definite check on gasoline qualities for "Certified" trademark purposes without too many tests being required.

As may be seen from an accompanying certification sheet, as of April 9, the arrangement of the Edington company with the Los Angeles Testing Laboratory also calls

Report on Certification of Gasoline

Laboratory Number: 27766
Submitted on: April 8, 1929
Submitted by: Edington Gasoline and Refining Co., 417 South Hill Street, Los Angeles
Identification: Edington gasoline. Sampled by the Los Angeles Testing Laboratory (C.J.S.) 4/8/29 from tank wagon distribution racks of the Edington Gasoline and Refining Co., Los Angeles

Distillation Test: (A.S.T.M.D86-27)	Result of Test:	Los Angeles City Ordinance Requirements:		United States Government Motor Gasoline Specifications:	
Initial Boiling Point:	91° F.	131° F.	(maximum)	131° F.	(maximum)
10%	149	.....		.....	
20%	186	221	(maximum)	221	(maximum)
30%	216	.....		.....	
40%	240	.....		.....	
50%	262	284	(maximum)	284	(maximum)
60%	286	.....		.....	
70%	316	.....		.....	
80%	352	.....		.....	
90%	390	392	(maximum)	392	(maximum)
End Point:	414	437	(maximum)	437	(maximum)
Recovery:	96.0%	95.0%	(minimum)	95.0%	(minimum)
Corrosion Test: (A.S.T.M.D130-22T)	Negative	Negative		Negative	
Color (Saybolt)	+30	Not required		.....	
Water and Suspended Matter:	None	None		.....	
Doctor Test:	Negative	Not required		.....	

The constituents of the gasoline under test may be classified as follows:

Highly volatile material:	33%
Volatile material:	58%
Less volatile material:	9%
TOTAL:	100%

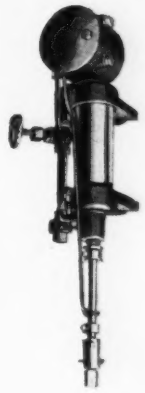
Respectfully submitted,

Los Angeles Testing Laboratory
(Signed) By Charles S. Howe

Announcing

the New Hayes

Air Motor



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HAYES

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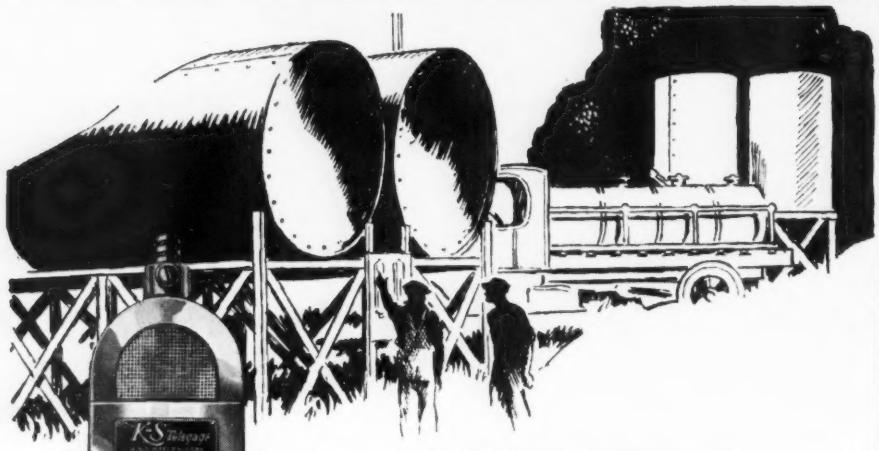

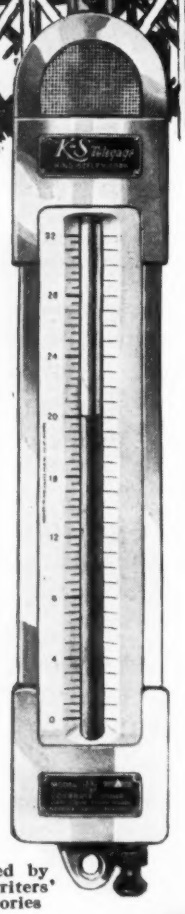

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for the setting up of percentages on highly volatile material, volatile material and less volatile material. That is for the purpose of showing power indication, ease in starting of motors and driving ranges.

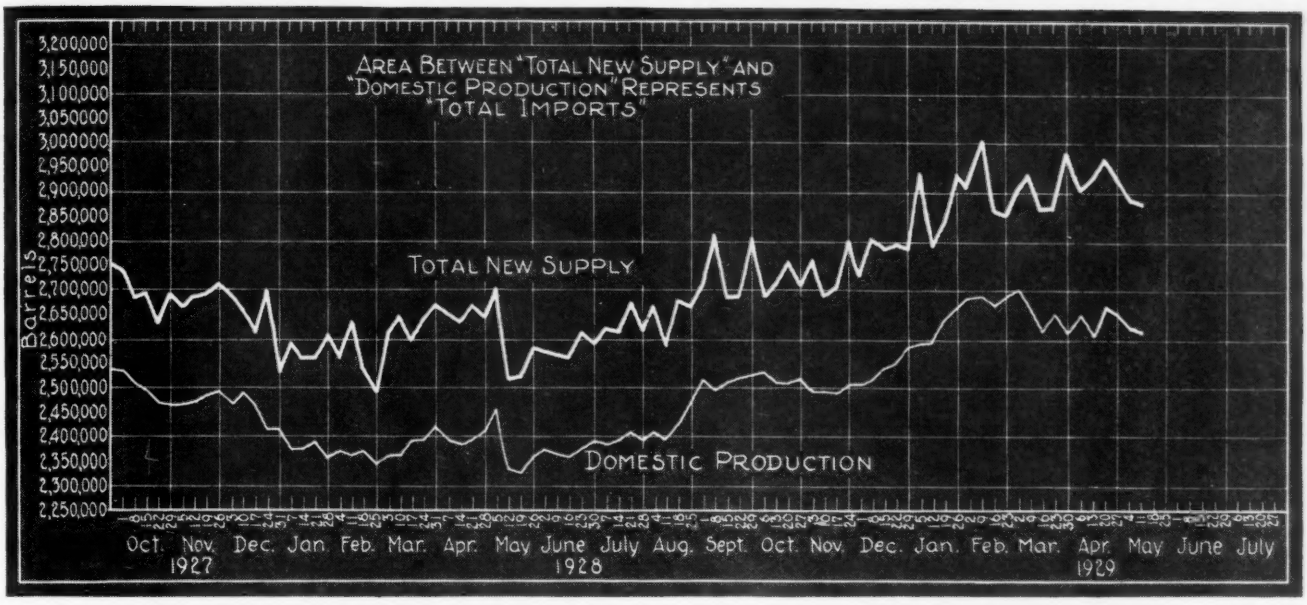
The Edington Gasoline and Refining Co., of which C. B. Edington is president, engages in the marketing business. Mr. Witz is a director. It is an associated corporation to the Edington-Witz Refining Co., operating a 3000-barrel straight run gasoline plant at Long Beach, of which Mr. Edington is president and Mr. Witz vice president and general manager.

Before locating in California in the early '20's, Mr. Witz was a Mid-Continent refinery superintendent connected with the International-Ardmore division of the old Ohio Cities Gas Co., which afterwards became the Pure Oil Co.

CLEVELAND, May 10.—The annual convention of the North American Gasoline Tax Conference will be held August 7, 8 and 9 in the Book-Cadillac hotel, Detroit, William A. McAtee, its president, has announced. Mr. McAtee is chief oil inspector of Missouri.

D. A. Little of Dallas, was elected a director of the Magnolia Petroleum Co. and of the Magnolia Pipe Line Co. at the recent annual meeting of the two companies. The directors made him assistant general manager subsequently. Mr. Little has been with the Magnolia since 1914. He was elected assistant treasurer in 1923 and transferred to the executive department in Feb. 1928.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	May 11	May 4
Production east of Rockies	1,865,950	1,878,650
Decrease		12,700
Total production in U. S.	2,624,750	2,629,850
Decrease		5,100
Crude oil imports	246,571	256,000
Decrease		9,429
Total crude supply	2,871,221	2,885,850
Decrease		14,529

OKLAHOMA

	May 11	May 4
Allen Dome	24,800	25,700
Blackwell	3,900	3,900
Bowlegs	33,600	34,450
Braman	3,400	3,400
Bristow-Slick	19,650	19,600
Burbank	20,750	20,850
Cromwell	7,950	7,900
Cushing	20,600	20,550
Davenport	1,500	1,500
Duncan District	6,400	6,500
Earlsboro	61,600	63,050
Fox	1,500	1,450
Garber	5,450	5,500
Braham	4,350	4,200
Healdton	13,000	13,000
Hewitt	8,100	8,100
Hubbard	2,000	2,000
Little River	75,950	78,250
Logan County	11,000	10,800
Maud	27,150	28,650
Mission	37,300	31,950
North Okmulgee	13,650	13,650
Oklahoma City	2,950	3,100
Osage (outside Burbank)	24,800	24,800
Papoose	3,350	3,350
Pearson	2,200	2,000
St. Louis	95,500	99,250
Scholem-Alechem	12,800	12,900
Searight	11,800	11,900
Seminole	32,850	33,700
South Okmulgee	7,900	7,850
Thomas	800	800
Tonkawa	10,450	10,450
Wewoka	4,900	4,900
Yale-Jennings	7,050	7,050
Others	50,650	49,100
Total, Oklahoma	671,600	676,100
Decrease		4,500

Kansas

Augusta-Fox Bush	2,950	2,950
Churchill	6,800	6,700
El Dorado-Towanda	12,700	12,700
Florence-Covert	1,000	1,000
Greenwood County	20,100	20,150
Oxford	4,950	5,050
Peabody-Elbing	2,750	2,750
Rainbow Bend	1,000	1,000
Russell	3,300	3,250
Sedgwick County	30,000	28,400
Others	28,500	27,700
Total, Kansas	114,050	111,650
Increase		3,600

NORTH LOUISIANA

Bellevue	650	700
Caddo, light	8,100	8,250
Caddo, heavy	3,250	3,200
Cotton Valley	2,800	3,000
De Soto and Red River	3,850	3,900
Elm Grove	600	600
Haynesville	5,350	5,350
Homer	4,000	4,000
Pleasant Hill	500	450
Urania	6,050	5,750
Others	200	250
Total, North Louisiana	35,350	35,450
Decrease		100

ARKANSAS

Champagnolle	8,100	8,850
El Dorado	4,650	4,700
Lisbon	1,300	1,350
Nevada	1,050	1,200
Smackover, light	6,200	6,200
Smackover, heavy	48,850	49,100
Stephens	1,000	1,050
Others	100	100
Total, Arkansas	71,250	72,550
Decrease		1,300

TEXAS (Outside Gulf Coast)

Panhandle District

Carson County	6,350	6,800
Gray County	24,350	25,400
Hutchinson County	25,150	25,700
Wheeler County	800	650
Others	2,800	1,800
Total, Panhandle Texas	59,450	60,350
Decrease		900

North Texas

Archer County	16,250	16,450
Burkburnett	8,700	8,800
Electra	12,250	12,500
Iowa Park and K. M. A.	5,500	5,450
Montague-Cooke	13,300	13,150
Wilbarger	27,000	27,300
Others	500	500
Total, North Texas	83,500	84,150
Decrease		650

West Central Texas

Brown County	8,100	8,250
Callahan County	3,950	4,100
Coleman County	3,400	3,500
Eastland-Desdemona	6,100	6,200
Jack County	1,700	1,800
Palo Pinto County	400	400
Shackelford County	12,900	13,000
Stephens County	6,100	6,200
Throckmorton County	600	600
Young County	6,500	6,600
Others	700	700
Total, West Central Texas	50,450	51,250
Decrease		800

West Texas

	May 11	May 4
Crane and Upton Counties	46,800	47,000
Crockett County	2,150	2,100
Howard County	44,100	45,000
Jones County	5,000	5,200
Mitchell and Scurry Counties	2,700	2,600
Pecos County	89,950	87,600
Reagan County	18,500	18,500
Winkler County	139,750	143,000
Others	2,000	2,100
Total, West Texas	350,950	353,100
Decrease		2,150

East Central Texas

Boggy Creek	2,600	2,800
Corsicana-Powell	7,900	7,950
Currie	500	500
Mexia	5,100	5,150
Nigger Creek	600	600
Richland	400	400
Wortham	950	1,000
Total, East Central Texas	18,050	18,400
Decrease		350

Southwest Texas

Dale	550	500
Laredo District	11,640	11,800
Luling	11,800	11,900
Lytton Springs	1,000	1,000
Salt Flat	43,300	40,200
Somerset	1,650	1,450
Others	3,950	4,250
Total, Southwest Texas	73,900	71,800
Increase		2,100
Total, Texas (Outside Gulf Coast)	636,300	639,050
Decrease		2,750

GULF COAST

Coastal Texas

Barbers Hill	6,500	8,850
Batson	1,400	1,500
Big Creek	2,600	2,700
Blue Ridge	3,750	4,250
Boling	1,800	1,900
Damon Mound	700	700
Goose Creek	6,000	6,100
Hull	9,050	9,000
Humble	10,950	11,700
Orange County	2,900	3,100
Pierce Junction	20,800	20,100
Racoon Bend	4,100	3,500
Saratoga	2,950	3,000
Somerville	900	1,000
Sour Lake	2,750	2,700
South Liberty	7,500	5,400
Spindletop	28,750	31,200
Sugarland	11,500	12,400
West Columbia	6,300	6,400
Others	4,150	4,350
Total, Coastal Texas	135,350	139,850
Decrease		4,500

Coastal Louisiana

East Hackberry	2,700	2,800
Edgerly	900	850
Evangeline	900	900
Lockport	3,800	4,000
Old Hackberry	3,300	3,700
Sorrento Dome	400	400
Sulfur Dome	2,000	2,900
Sweet Lake	400	400
Vinton	4,250	4,000
Others	700	750
Total, Coastal Louisiana	19,350	20,700
Decrease		350
Total Gulf Coast	154,700	160,550
Decrease		5,850

ROCKY MOUNTAIN

Wyoming

	May 11	May 4
Bid Muddy	2,400	2,350
Elk Basin	850	850
Grass Creek	2,150	2,150
Labarge	1,800	1,800
Lance Creek	300	300
Lost Soldier	3,300	3,300
Oregon Basin	2,800	2,350
Rock Creek	2,550	2,500
Salt Creek	30,450	33,600
Others	3,900	3,700
Total, Wyoming	50,500	52,900
Decrease		2,400

Montana

Cat Creek	1,400	1,400
Pondera	2,950	2,450
Sunburst	6,500	6,500
Others	100	100
Total, Montana	10,950	10,450
Increase		500

Colorado

Florence	1,100	900
Fort Collins	2,300	2,500
Moffat (Craig)	1,400	1,150
Others	1,750	1,750
Total, Colorado	6,550	6,300
Increase		250

New Mexico

Artesia	900	900
Hogback	250	250
Rattlesnake	150	.....
Others	400	400
Total, New Mexico	1,700	1,550
Increase		250
Total, Rocky Mountain	69,700	71,200
Decrease		1,500

CALIFORNIA

	May 11	May 4
Dominguez	10,000	10,300
Elwood-Goleta	29,000	30,000
Huntington Beach	42,000	42,000
Inglewood	23,500	22,500
Kettleman Hills	3,500	3,500
Long Beach	177,000	175,000
Midway-Sunset	65,000	72,500
Rosecrans	6,800	6,400
Santa Fe Springs	170,000	160,000
Seal Beach	41,000	36,000
Torrance	13,000	13,500
Ventura Avenue	55,000	54,000
Others	123,000	125,500
Total, California	758,800	751,200
Increase		7,600

EASTERN

(Including Ill., Ind., Ky., O., W. Va., Pa., and N. Y.)	113,000	112,000
Increase		1,000

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations Week Ended May 10 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended May 10
Plants Reporting.....	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)..	92,000	160,200	86,600	81,500	54,900	475,200
Da. Cracking Capacity	30,700	52,600	17,200	.....	22,700	123,200
Da. Av. Crude Runs..	69,302 + 11.0	121,828 + 14.7	59,583 — 6.7	53,816 — 1.9	60,152 — 6.7	364,581 + 3.7
Da. Av. Other Oils....	6,151 — 21.0	3,306 — 59.6	1,375 — 1.9	101	2,205 — 22.7	13,138 — 35.1
GASOLINE—Gallons						
Stocks, May 3.....	31,642,000	74,710,000	18,370,000	7,494,000	9,201,000	141,237,000
Prod. 5-3 to 5-10.....	9,908,000 + 3.3	19,189,000 + 12.0	7,161,000 — 5.2	4,065,000 — 1.3	5,659,000 — 12.1	45,982,000 + 2.5
Ship. 5-3 to 5-10.....	9,409,000 + 1.8	17,943,000 + 0.6	7,645,000 — 23.9	3,894,000 — 3.9	5,035,000 — 7.7	43,926,000 — 5.8
Stocks, May 10.....	32,141,000 + 1.6	75,956,000 + 1.7	17,886,000 — 2.6	7,665,000 + 2.3	9,645,000 + 6.9	143,293,000 + 1.5
Ratio Sales to Prod...	95.0%	93.5%	106.8%	95.8%	89.0%	95.5%
KEROSENE—Gallons						
Stocks, May 3.....	7,194,000	7,290,000	2,600,000	74,000	795,000	17,953,000
Prod. 5-3 to 5-10.....	2,177,000 + 0.9	2,412,000 + 21.5	1,640,000 + 0.5	19,000 + 72.7	251,000 — 47.7	6,499,000 + 3.7
Ship. 5-3 to 5-10.....	2,625,000 + 64.2	2,226,000 + 15.6	1,306,000 — 8.9	27,000 +1250.0	287,000 — 15.3	6,471,000 + 22.1
Stocks, May 10.....	6,746,000 — 6.2	7,476,000 + 2.6	2,934,000 + 12.8	66,000 — 10.8	759,000 — 4.5	17,981,000 + 0.2
Ratio Sales to Prod...	120.6%	92.3%	79.6%	142.1%	114.3%	99.6%
STOVE DISTILLATE—Gallons						
Stocks, May 3.....	1,404,000	3,138,000	385,000	363,000	48,000	5,338,000
Prod. 5-3 to 5-10.....	265,000 — 27.0	427,000 + 9.2	274,000 + 80.3	120,000 — 16.7	143,000 +155.4	1,229,000 + 11.1
Ship. 5-3 to 5-10.....	266,000 + 81.0	419,000 — 2.8	76,000 — 82.7	125,000 +247.2	99,000 + 83.3	985,000 — 11.1
Stocks, May 10.....	1,403,000 — 0.1	3,146,000 + 0.3	583,000 + 51.4	358,000 — 1.4	92,000 + 91.7	5,582,000 + 4.6
Ratio Sales to Prod...	100.4%	98.1%	27.7%	104.2%	69.2%	80.1%
GAS OIL—Gallons						
Stocks, May 3.....	8,438,000	18,332,000	7,354,000	17,374,000	6,749,000	58,247,000
Prod. 5-3 to 5-10.....	2,058,000 + 2.4	2,464,000 — 46.1	1,095,000 — 43.6	1,950,000 — 6.2	1,956,000 — 12.6	9,523,000 — 25.8
Ship. 5-3 to 5-10.....	1,264,000 — 13.4	355,000 — 90.4	702,000 — 47.4	1,355,000 — 16.7	1,928,000 + 10.5	5,604,000 — 43.3
Stocks, May 10.....	9,232,000 + 9.4	20,441,000 + 11.5	7,476,000 + 5.3	17,969,000 + 3.4	6,777,000 + 0.4	62,166,000 + 6.7
Ratio Sales to Prod...	61.4%	14.4%	64.1%	69.5%	98.6%	58.8%
FUEL OIL—Gallons						
Stocks, May 3.....	12,793,000	51,815,000	41,392,000	32,865,000	24,921,000	163,786,000
Prod. 5-3 to 5-10.....	5,559,000 + 5.6	7,459,000 + 14.5	6,812,000 — 4.6	8,149,000 + 1.0	7,922,000 — 2.3	35,901,000 + 2.3
Ship. 5-3 to 5-10.....	5,561,000 + 33.1	6,490,000 + 36.4	7,249,000 + 12.4	8,141,000 + 5.2	7,965,000 — 0.4	35,406,000 +13.8
Stocks, May 10.....	12,791,000 — 0.02	52,784,000 + 1.9	40,955,000 — 1.1	32,873,000 + 0.02	24,878,000 — 0.2	164,281,000 + 0.3
Ratio Sales to Prod...	100.04%	87.0%	106.4%	99.9%	100.5%	98.6%

Gasoline Produced by Various Methods, Week Ended May 10

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run.....	7,220,000	72.9	13,392,000	69.8	5,220,000	72.9	3,938,000	96.9	2,465,000	43.6	32,235,000	70.1
Cracked.....	2,456,000	24.8	5,041,000	26.3	1,486,000	20.7	.....	....	2,600,000	45.9	11,583,000	25.2
Natural.....	232,000	2.3	756,000	3.9	455,000	6.4	127,000	3.1	594,000	10.5	2,164,000	4.7
Total.....	9,908,000		19,189,000		7,161,000		4,065,000		5,659,000		45,982,000	

+ or — columns are % change over previous week.

Weather Cuts Mid-Continent Gasoline Shipments

Staff Special—By Telegraph
TULSA, May 13

THE combination of increased crude runs in Oklahoma and Kansas and unfavorable motoring weather in much of the middle West which cut down demand for gasolines caused the 93 Mid-Continent refiners reporting weekly operations to this publication to increase gasoline stocks 2,000,000 gallons in the week ended May 10 according to a compilation of the weekly reports.

Crude runs for the field as a whole were increased over 12,000 barrels daily average to 364,581 barrels per day. Kansas refiners increased their runs 6,400 barrels daily average or 11 per cent and Oklahoma refiners increased runs by 15,600 barrels or 14.7 per cent. North Texas refiners reduced crude runs 6.7 per cent, West Texas refiners showed a reduction of 1.9 per cent and the Louisiana-Arkansas re-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended May 10. Change in stocks figured from April 12.

	Gallons
GASOLINE	
Production	180,727,000
Shipments	178,445,000
Net change in stocks	2,282,000
Ratio sales to production	98.7%
KEROSENE	
Production	25,361,000
Shipments	22,135,000
Net change in stocks	3,226,000
Ratio sales to production	87.3%
STOVE DISTILLATE	
Production	4,237,000
Shipments	3,470,000
Net change in stocks	767,000
Ratio sales to production	81.9%
GAS OIL	
Production	42,735,000
Shipments	30,761,000
Net change in stocks	11,974,000
Ratio sales to production	72.0%
FUEL OIL	
Production	145,742,000
Shipments	134,812,000
Net change in stocks	10,930,000
Ratio sales to production	92.5%

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NATIONAL PETROLEUM NEWS
700 Penton Bldg.
Cleveland, Ohio

finers cut runs 6.7 per cent. The increase for the entire field amounted to 3.7 per cent.

Gasoline production accordingly was increased 1,100,000 gallons to 45,982,000 gallons. This is the highest gasoline production total so far this year. The production increase occurred in Kansas and Oklahoma the other districts showing a decrease in output.

Gasoline shipments were lower by 2,700,000 gallons than they were for the week ended May 3. Kansas shipments increased 1.8 per cent and Oklahoma shipments increased 0.6 per cent but North Texas shipments dropped 23.9 per cent. The drop in that district however was not sufficient to cause any addition to storage. This district was the only one which drew on stocks. This probably can be accounted for by the fact that a few refiners recently booked some export orders for reasonably prompt shipment.

Stocks of gasoline at this time are not comparable with those of a year ago for the field as a whole because of the addition of West Texas but the Oklahoma-Kansas stocks can be compared. Stocks in Oklahoma and Kansas May 11, 1928 totaled 70,880,000 gallons as compared with a total May 10 this year of 108,097,000 gallons. The stocks this year accordingly are 37,217,000 gallons higher than they were a year ago.

Kerosene production was increased only slightly while shipments increased in each district except Louisiana and Arkansas. Production increase amounted to 3.7 per cent and shipment increase to 22.1 per cent. This brought production and shipments virtually on a parity and stocks were increased only 28,000 gallons. Kansas, West Texas and Louisiana-Arkansas refiners drew on stocks.

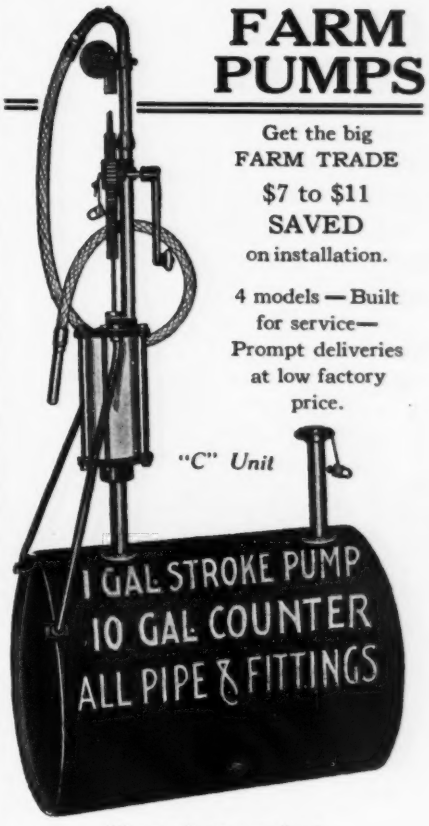
Per cent of increase in distillate production was the same as the per cent of loss in shipments—11.1 per cent—and stocks were increased 4.6 per cent or 244,000 gallons.

Gas oil production was lower by 3,300,000 gallons with each field sharing in the reduction except Kansas which increased production 2.4 per cent. Shipments were lower by 4,200,000 gallons and stocks accordingly were increased 3,900,000 gallons.

Fuel oil stocks were increased 400,000 gallons with production up 2.3 per cent and shipments up 13.8 per cent.

Correction

E. F. Griswold, of the Pecos Valley Refining Co., informs that his plant at Pyote, Tex., has a crude capacity of 10,000 barrels a day, instead of 2000 barrels a day as was stated in a table of West Texas refineries printed on Page 40-d of the May 1 issue of NATIONAL PETROLEUM NEWS.



FARM PUMPS

Get the big FARM TRADE
$7 to $11 SAVED on installation.

4 models — Built for service—Prompt deliveries at low factory price.

"C" Unit

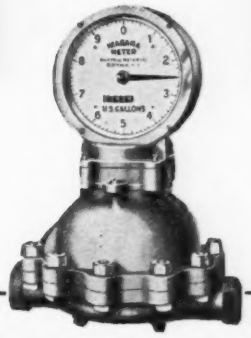
Now is the time to buy! Write Today

MARS CO., Aurora, Ill.

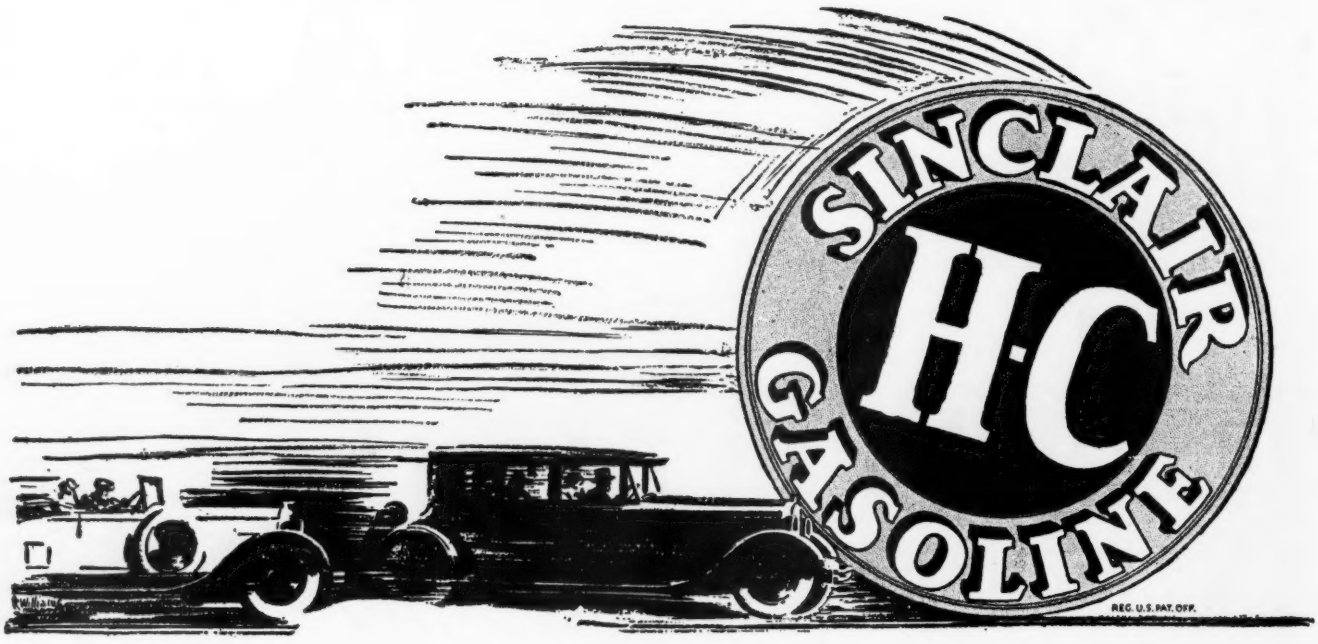
ACCURACY

Regardless of how much or how little gasoline or oil passes through a Niagara meter, it accurately registers and records, preventing loss, theft or favoritism.

And a Niagara repays its cost by enabling you to sell and profit on the gasoline and oil that would be unaccounted for without a meter! Send today for our newest catalogue.



BUFFALO METER COMPANY
2889 Main St., Buffalo, N. Y.



Gives
HIGH COMPRESSION Performance in any make of Engine

YOU'LL never know how much power you can get out of your engine until you put Sinclair H-C Gasoline into your tank!

Whether you drive a roadster or a limousine, a four-cylinder or an eight—there's a new motoring thrill awaiting you in H-C Gas because it gives High Compression performance in new or old engines of any type.

This extraordinary gasoline allows your engine to operate at its maximum compression and deliver its full power under all engine conditions.

H-C Gasoline is *all* gasoline—its High Compression Anti-Knock properties are in the gasoline—*not in any added foreign substance.*

H-C is the correct answer to your question: "What gas shall I use to keep the knock out of my cylinders?" It's the safest, surest, finest gas that your motor-money can buy. It gives you better low gear performance and makes it easy for you to get your engine's *full* power! Look for the silver-like H-C pump.

The better all-year High Compression Anti-Knock fuel for all engines!

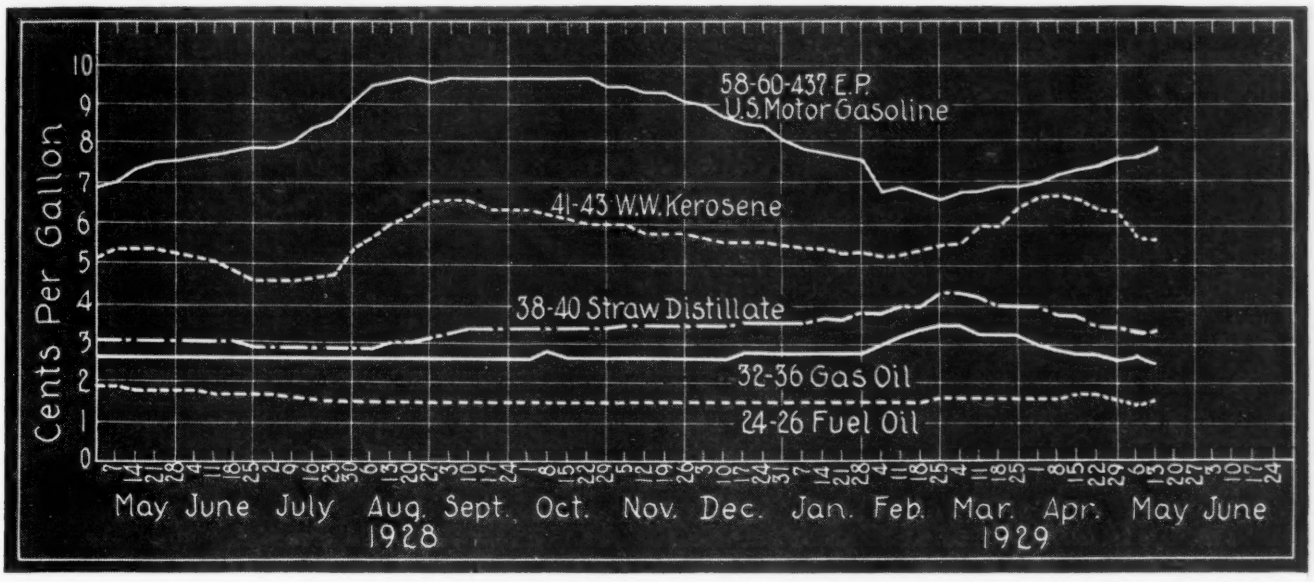
SINCLAIR H-C GASOLINE
STOPS KNOCKS

SINCLAIR REFINING COMPANY, INC., 45 NASSAU STREET, NEW YORK ATLANTA BOSTON CHICAGO HOUSTON KANSAS CITY

Refinery - Tank Wagon Markets

National Petroleum News

Current Prices of Principal Mid-Continent Refined Products



Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

Export Buying Brings Relief to Falling Kerosene Market

Staff Special
TULSA, May 11

ADVANCES of 1 to 2 cents a gallon on some grades of neutral oils and a good demand for bright stocks with several refiners reporting they were sold up was one of the features of the Mid-Continent refinery market for the week of May 6 to 11 inclusive.

Gasoline prices advanced 0.125 cent a gallon to domestic buyers, but exporters showed only mild interest in the market. Gasoline movement was fair in most districts.

Purchase of 1,500,000 gallons of kerosene for export was reported in north Texas. Domestic buying of kerosenes was light and the north Texas district was the easiest in the Mid-Continent.

Other oils were comparatively quiet in demand.

Gas oil from West Texas refineries brought considerable competition to Oklahoma refineries.

Lower grades of natural gasolines lost some ground with demand light. Price of grades A and AA were steady throughout the week but buying was light in most quarters.

Neutral Oils and Cylinder Stocks

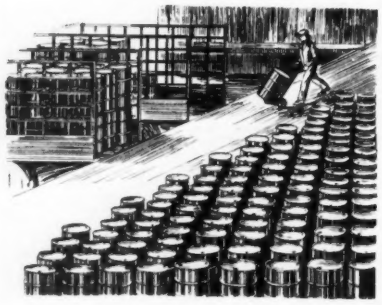
A majority of Oklahoma refiners making neutral oils advanced their quotations early in the week. Demand was reported exceptionally good by most makers although they said they had encountered some competition from Gulf Coast points. The heaviest demand was for the 200 viscosity neutrals.

Bright stock demand continued to be extremely brisk most refiners reported. Several said they had virtually no 150-160 vis. 210 bright stock in storage at the present time. Many of them have received numerous inquiries from Pennsylvania refiners.

Gasolines

A majority of Oklahoma refiners May 6 advanced prices of gasolines 0.125 cent a gallon, making the 58-60 U. S. Motor grade 7.75 cents. Unfavorable weather in much of the Middle West curtailed gasoline consumption which in turn cut down demand at refineries, but the loss of business was not sufficient to cause any concern at the present time. Many of the refiners reported their shipments continued to keep pace with production.

North Texas probably was the easiest spot in the Mid-Continent. Several refiners in that district and in the West Texas district had contracts for U. S. Motor through April but no new buying of consequence has developed since the first of the month and those making the U. S. Motor grade reported they had a little more accumulation of stocks than they desired just at this time. Prices were



BENETCO *Drums for* Oil and Grease

Whether your requirements call for a drum of two or sixty-five gallons with small or large opening, there is a Benetco steel container that fits your needs. And you may be sure that whatever drum you select from this comprehensive assortment will be the most perfect of its kind; a direct result of experience covering a score of years in the making of *trustworthy* containers.

WILSON & BENNETT MFG. CO.

6520 S. MENARD AVE. CHICAGO

You Sell 50 Gallons *Instead of* "5"

Turn your "drive in" customers into bulk buyers and get ALL their business. Double and treble your volume of gas and oil sales. Others are doing it. So can you with this new

KWART KWICK
Home Oil Pump

This handy pump fits any drum or barrel. Ideal for home garages, working equally well with oil, gas or other liquids. Nominal in cost—long wearing. Built of finest brass, steel and cast iron. Big discounts to oil companies for quantities.

Distributing one of these pumps with bulk sales is a real way of boosting sales and of tying up with your customers for repeat business. Mail coupon today for descriptive literature.

Kwart Kwick Dep't.
VIKING PUMP COMPANY
Cedar Falls, Ia.

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Viking Pump Co., Dep't. B.

Please send details and prices on your Kwart Kwick Pump.

Name.....

Town.....

State.....

0.25 to 0.375 cent under the Oklahoma prices for shipment to some points.

Kansas, Louisiana and Arkansas refiners reported their gasoline business was fair. The floods which have affected the Louisiana and Arkansas refiners the past few weeks have begun to clear up and a few of them reported a slight increase in business the past week.

Kerosenes

A Tulsa broker late in the week bought 1,500,000 gallons of 41-43 kerosene from north Texas refiners for export. The broker was buying for the account of a foreign customer who has come into the market to buy direct from refiners. This broker already has handled two part cargoes of gasoline under this arrangement and reports indicated the plan was working successfully. The price paid for the kerosene was reported to have been 5 cents a gallon.

The export buying took considerable slack out of the north Texas kerosene market. That was the easiest point and prices had been as much as 0.375 cents under the prices quoted by Oklahoma refiners. Domestic demand for kerosene showed little change throughout the week, but refiners continued to anticipate a better demand as soon as weather conditions became more favorable for farmers to get into their fields with their tractors.

Gas Oils and Distillates

West Texas refiners lowered prices for their gas oil to 1.875 cents in some instances. That price was about on a basis of 2.125 cents, Group 3. Several of them reported demand for gas oil was comparatively light.

Prices of 32-36 U. G. I. gas oil in Oklahoma May 11 was 2.25 to 2.50 cents a gallon. Demand was reported light except from refiners buying for cracking purposes.

The only demand for distillates was from jobbers in the north who had to have a car or two to finish out the season, especially as a result of the cold snap a week ago.

Fuel Oils

Increased cracking operations in north Texas caused a scarcity of 24-26 fuel oil. One or two companies who normally make this grade were storing so they would have charging stock when new cracking units were completed. Other refiners with cracking units bought from those without crackers and buyers seeking the goods for shipment to points outside the state had some difficulty locating the material.

Fuel oil prices were only slightly changed in Oklahoma. Demand was reported only fair in most quarters.

Natural Gasolines

Natural gasolines encountered the usual first half of the month buying lull. Inquiries were only for small lots and no large buyers were reported in the field. Prices of the lower grades May 11 were off from 0.25 to 0.375 cents a gallon from those in effect May 4.

Grades A and AA were in slightly better demand and prices lost no ground. This was due primarily to the buying efforts of one large manufacturer, who early in the week informed the trade that he would pay 7.75 cents for grade AA. The buyer accepted several fair sized lots early in the week but reports May 11 indicated he had withdrawn from the market.

Two Sets of Gasoline Prices in Okla.

TULSA, May 11.—The so-called price war in Oklahoma which was precipitated May 1 has settled to the status of two tank wagon and two service station prices. Magnolia Petroleum Co.'s tank wagon price of 14 cents and service station price of 18 cents has been met generally by other major distributors with the exception of Pierce Petroleum Co. and Champlin Refining Co.

Virtually all the major Independents on May 6 met the Magnolia posting, but Pierce Petroleum Corp. continued to maintain its announced schedule of 14 cents tank wagon and 17 cents service station, with "no secret rebates or commercial discounts."

Reports indicated the commercial discount plan which Magnolia was accused of having instituted in two or three places after all major distributors had abolished them April 1, has now spread to "four or five" places in Oklahoma.

No further effort has been made by Pierce Petroleum Corp. to explain its position since the advertisements appearing in Tulsa newspapers May 4 and 5.

Want Sunday Shut-Down for Stations

RICHMOND, Va., May 11.—A second meeting to consider a county-wide law for the closing of filling stations on Sunday was held in Goldsboro, N. C., recently. This meeting was held before the county board of commissioners and was attended by 200 citizens. A spokesman for the citizens quoted county officers as saying that many of the filling stations were operated for bootlegging activities, according to newspaper reports.

CHICAGO, May 13.—Mr. Arthur Stoll, Chicago representative of the Petroleum Oils Corp., Kansas City, Mo. has taken offices in the Builders Building, 228 No. La Salle St., Chicago.

Chicago Resale Market

Kerosene and Heavy Oils Lower

Staff Special
CHICAGO, May 11

THE Chicago resale market passed a quiet week with little of importance occurring. Inclement weather in this territory has held down the spot demand for gasoline and kerosene, while the season for burning oils was practically over.

The spot demand for U. S. Motor gasoline was only fair in most quarters, while both refiners and marketers reported their contract customers were ordering out practically their maximum allotments. The consumption in most places was evidently good enough to enable jobbers to keep their contract gasoline rolling while still too light to bring about an active spot demand.

Gasoline prices were reflecting the unsettled weather conditions with more strength in some quarters and somewhat lower prices in others. The major refiners advanced their U. S. Motor price 0.125 cent on May 6 to 7.75 cents and several of them stated they would probably advance another 0.125 cent to 7.875 cents on May 13.

On the other hand a number of carlot marketers, who had purchased Oklahoma U. S. Motor for resale at 7.25 and 7.375 cents for the first half of May delivery, found themselves approaching the 15th lacking instructions on part of their purchases. They reported moving some of this goods at 7.50 cents for immediate shipment. The bulk of sales of Oklahoma U. S. Motor gasoline were reported at 7.625 to 7.75 cents throughout the week and most of the trade were of the opinion that all the lower priced goods would be off the market by the end of next week.

U. S. Motor gasoline, originating outside of Oklahoma, was being offered by Chicago sellers at 7.50 to 7.75 cents on Group 3 freight basis, with some sales of distress goods going at 7.375 cents. One carlot marketer reported buying some North Texas U. S. Motor at 7.375 cents, Group 3, for delivery over the last half of May. Another marketer reported buying some Oklahoma U. S. Motor for shipment over a like period at 7.50 cents.

The market on higher gravity gasolines was dull, although prices were holding about the same level above U. S. Motor as for the past month. The 60-62, 437 e. p. moved mostly at 7.75 to 7.875 cents, while the 60-62, 400 e. p. was at 7.75 to 8 cents. Sales of 64-66, 375 e. p. gasoline were mostly at 8.125 to 8.375 cents.

Kerosenes were lifeless during the first half of the week, while several sellers reported a considerably increased demand during the past two or three days. Prices were tending towards greater stability during the latter half of the week after dropping approximately 0.25 cent in first half.

Kerosenes were commanding a wide range of prices during the week. Sales were reported from 5.25 cents up to 6.25 cents, although the majority of sellers were asking around 5.75 cents. Sales were mostly at 5.75 to 6.125 cents on May 6, at 5.75 to 6 cents on May 7 and at 5.50 to 6 cents over the rest of the week.

Distillate demand was spotty throughout the week with only scattered cars moved. Prices were without material change in nearly all quarters. The 38-40 light straw was generally quoted at 3.375 to 3.625 cents.

Inquiries from industrial concerns for gas and fuel oils were coming in consistently and movement of these grades of oils was satisfactory, most of the trade reported. Spot demand for gas and fuel oils was light, while prices were generally unchanged.

Gas oils were moved mostly at the following prices: 32-36 ordinary dark, 2.375 to 2.50 cents; 32-36 dark zero, 2.625 to 2.75 cents; and 32-36 straw zero at 2.75 to 2.875 cents.

The high sulfur grade of 18-22 fuel oil was somewhat easier than last week, but in general fuel oil prices were unchanged. Sales of high sulfur 18-22 were reported at $0.45 with the high range at $0.525 until May 10 when it was $0.50. Low sulfur 18-22 moved mostly at $0.55 to $0.60. The 24-26 fuel oil continues to move at $0.65 to $0.675. The zero grades of 28-30 were at $0.90 to $1.00 until May 11 and closed at $0.875 to $0.975. The higher cold test 28-30 was around $0.85 to $0.90.

Shower periods are likely throughout next week in Standard of Indiana territory, especially in eastern and southern portions. Temperatures will be near normal the first half of the week while becoming lower the latter half.

CHICAGO, May 11.—Mr. E. J. McGonigle, formerly with Shaffer Oil & Refining Co., has accepted a position as Chicago representative of the Burford Oil Co., Pecos, Texas.

NO MATTER where you are located we can save you money, time and trouble in the buying of

NATURAL GASOLINE

Anti-Knock Properties

20% to 40% Benzol Equivalent

In Any Quantities from a Tank Car to a Train Load From Any Field

Shipped to take advantage of the freight rates.

Long Distance or a Wire or a Letter

Union Oil Company

of Pennsylvania

Incorporated

Warren, Penna.

Union Oil Company of Pennsylvania,
Canada Div., Ltd.,
1170 Yonge St., Toronto, Ont.

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

Comparative Prices of 58-60 U. S. Motor Gasoline, Group 3 and Point of Origin, to Jobbers Only

In Effect May 13

	Price F.O.B. Group 3	*Price F.O.B. Point of Origin*	*If for Particular Destination*
Oklahoma	7.7602 (Wt. Avg.)	7.7602 (Wt. Avg.)	
Kansas	7.75		S. O. Neb & Ind. Ter., etc.
Kansas		8.0781 (Wt. Avg.)	Kansas only.
North Texas	7.50-7.625	7.375-7.50	
West Texas	7.50-7.625	7.375-7.50	
Louisiana-Ark.	7.75		Mich., Ohio & Indiana.
Louisiana-Ark.		8.00	State or differential haul.
Indiana-Illinois	7.75	*	S. O. Ind. territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Weighted Average Prices

OKLAHOMA

	May 13		May 6		April 29	
	No. of cars	Price	No. of cars	Price	No. of cars	Price
58-60 U. S. Motor, 437 e. p.	61	7.7602	98	7.6696	122	7.5635
60-62 437 e. p. gasoline	11	8.0000	12	7.8125	7	7.7857
60-62 400 e. p. gasoline	1	8.0000	1	8.1250	1	8.1250
64-66 375 e. p. gasoline	2	8.6250	1	8.6250	2	8.5000

The advance May 6 of 0.125-cent a gallon in gasolines by Oklahoma refiners was quickly reflected in the weighted averages. Demand for gasolines was only fair due to unfavorable motoring weather but shipments continued to keep virtually in step with production.

Some competition was encountered by Oklahoma refiners from areas outside Group 3 but the tendency even on the part of the few non-reporting refiners was to let the business go by rather than sell at these competitive prices.

KANSAS

	May 13		May 6		April 29	
	No. of cars	Price	No. of cars	Price	No. of cars	Price
58-60 U. S. Motor, 437 e. p.	8	8.0781	13	7.9038	25	7.8800

Kansas refiners experienced a slightly better demand for gasolines and prices were 0.25 to 0.375-cent higher than Oklahoma for shipment within the state. Virtually no surplus gasoline was reported on the market.

GASOLINE AND NAPHTHA

OKLAHOMA	Prices May 13	Prices May 6	Prices April 29
48-50 450 e.p. naphtha	7.375- 7.50	7.125- 7.375	7.125- 7.375
50-52 450 e.p. naphtha	7.375- 7.50	7.125- 7.375	7.125- 7.375
56-58 450 e.p. gasoline	7.375- 7.50	7.25	7.25
58-60 450 e.p. gasoline	7.375- 7.625	7.25 - 7.375	7.25 - 7.375
64-66 390 e.p. gasoline	8.75 - 9.00	8.00 - 8.25	8.00 - 8.25
68-70 350-360 e.p. gasoline	8.625- 8.75	8.625- 8.75	8.625- 8.75

†Prices nominal ††Only one refiner quoting *Quotations only

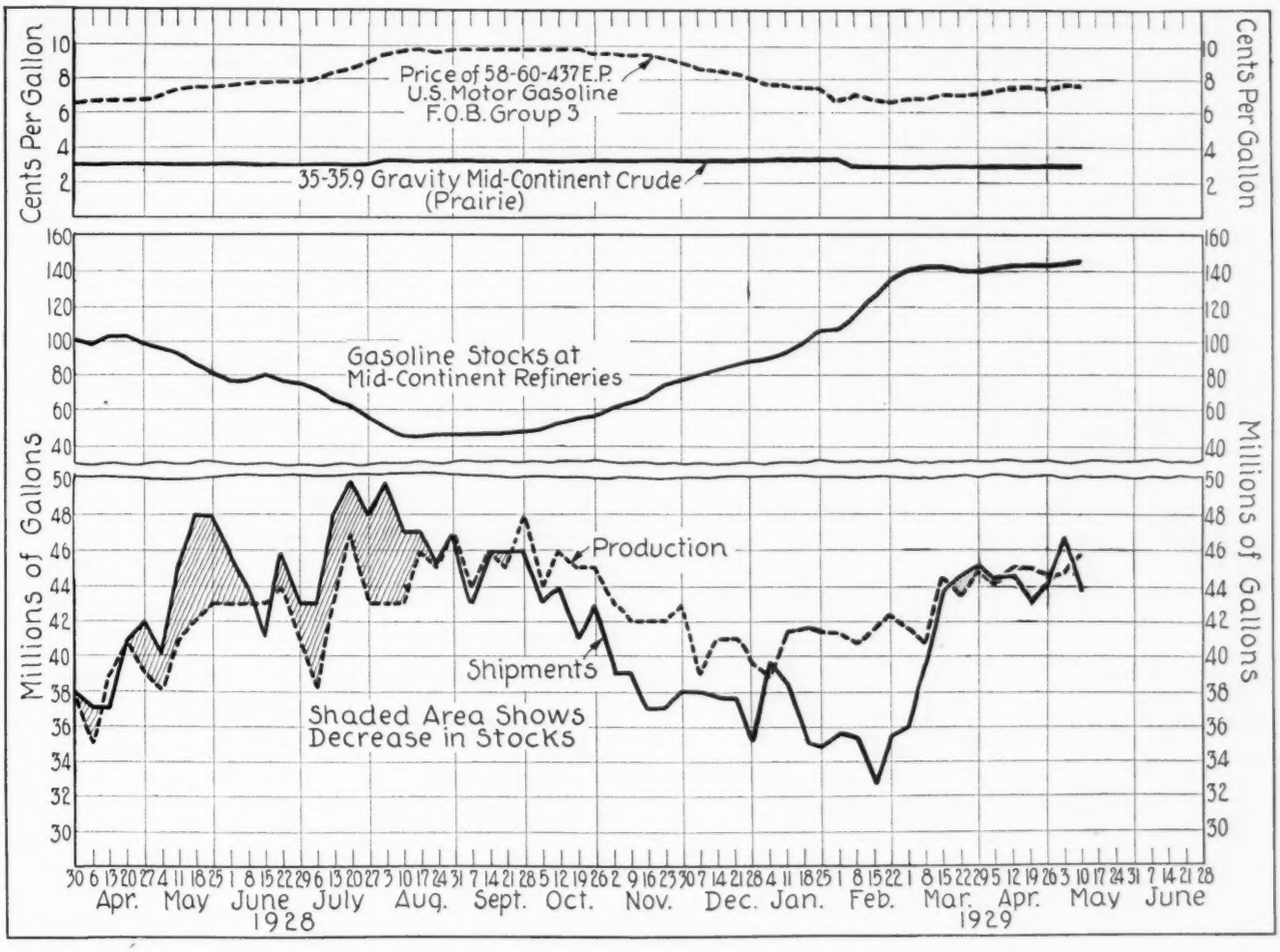
PENNSYLVANIA	Prices May 13	Prices May 6	Prices April 29
52-54 Naphtha	8.875- 9.00	8.75 - 9.00	8.50 - 9.00
54-56 Naphtha	9.00 - 9.50	8.75 - 9.50	8.75 - 9.50
58-60 U.S. Motor 437 e.p.	9.50 - 9.75	9.25 - 9.75	9.25 - 9.75
60-62 400-410 e.p. gasoline	9.75 -10.25	9.50 -10.25	9.50 -10.25
64-66 390 e.p. gasoline	10.50 -11.00	10.25 -11.00	10.25 -11.00
68-70 Str-run gas 350-360 e.p.	11.50 -12.00	11.25 -12.00	11.25 -12.00

(Continued on Page 130)

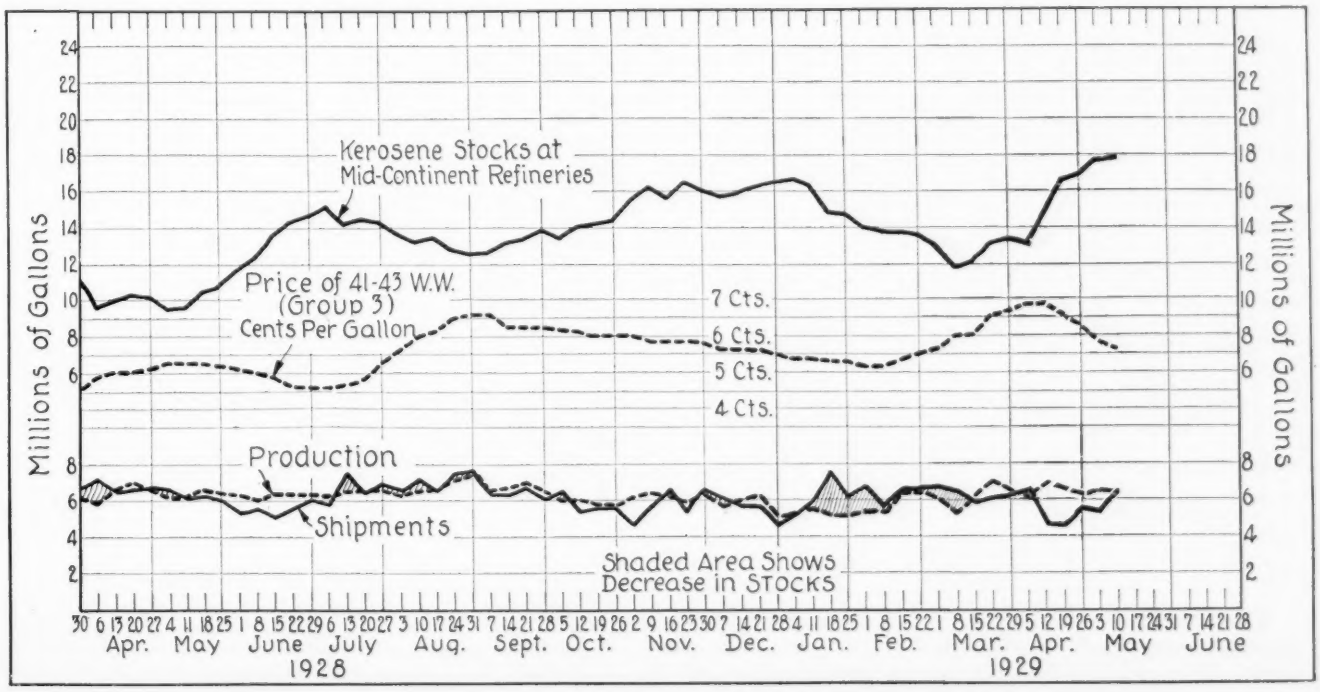
**Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending May 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 122



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)
U. S. Motor Gasoline

	Prices May 13	Prices May 6	Prices April 29
Cincinnati	11.25	11.25	10.75
Cleveland, Toledo, Lima, within refinery switching area	11.25	11.25	10.75
Elsewhere in Ohio	11.50	11.50	11.25

KANSAS (F. O. B. refinery Kansas destination)

60-62 437 e.p. gasoline	8.00 – 8.125	7.75 – 8.00	7.75 – 8.00
60-62 400 e.p. gasoline	8.125– 8.375	8.125– 8.375	8.00 – 8.25
64-66 375 e.p. gasoline	8.50 – 8.625	8.50 – 8.625	8.50 – 8.625

NORTH TEXAS

48-52 450 e.p. naphtha	†7.125– 7.25	†7.00 – 7.125	†7.00 – 7.125
56-58 450 e.p. gasoline	7.125– 7.25	7.125	7.125
58-60 450 e.p. gasoline	7.125– 7.25	7.125	7.125
58-60 U.S. Motor 437 e.p.	7.375– 7.50	7.50	7.375– 7.50
60-62 400 e.p. gasoline	7.75	7.50 – 7.625	7.50 – 7.625
64-66 390 e.p. gasoline	7.75 – 8.00	7.625– 7.75	7.625– 7.75
64-66 375 e.p. gasoline	8.00	7.875	7.875
68-70 350-360 e.p. gasoline	8.25 – 8.375	8.25 – 8.375	8.25 – 8.375

****WEST TEXAS (F.o.b.West Texas refinery, for unrestricted shipment)**

50-52 naphtha	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
56-58 437 e.p. gasoline	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
58-60 437 e.p. gasoline	7.375– 7.50	7.25 – 7.50	7.25 – 7.50

NORTH LOUISIANA (N. La., Ark., and Miss. destination)

58-60 U.S. Motor gasoline	8.00	8.00	7.875

ARKANSAS (Arkansas destination only)

58-60 450 e.p. gasoline	7.75	7.75	7.50
58-60 U.S. Motor 437 e.p.	8.00	8.00	7.75 – 7.875
61-63 390 e.p. gasoline	††8.75	††8.75	8.00 – 8.50

‡CALIFORNIA

54-58 U.S. Motor 437 e.p.	8.00 – 9.00	7.75 – 8.50	7.00 – 8.50
58-61 375-400 e.p. gasoline	8.50 –10.50	8.50 –10.50	7.50 – 9.00
42-45 Eng. dis. 445-480 e.p.	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA

Grade AA, 80-87.9, 90% Recovery	7.25 – 7.50	7.75	7.75
Grade A, 72-79.9, 90% Recovery	7.25 – 7.50	7.75	7.75
Grade BB, 84-92, 85% Recovery	6.75 – 6.875	‡7.25 – 7.375	7.50
Grade B, 76-83.9, 85% Recovery	6.75 – 6.875	‡7.25 – 7.375	7.50
Grade C, 80-90, 78% Recovery	6.75 – 6.875	‡7.00 – 7.25	7.375

Offers to buy; no sales reported.

NORTH TEXAS (F. O. B. Breckenridge)

Grade AA, 80-87.9, 90% Recovery	7.25 – 7.50	7.75	7.75
Grade A, 72-79.9, 90% Recovery	7.25 – 7.50	7.75	7.75
Grade BB, 84-92, 85% Recovery	6.75 – 6.875	‡7.25 – 7.375	7.50
Grade B, 76-83.9, 85% Recovery	6.75 – 6.875	‡7.25 – 7.375	7.50
Grade C, 80-90, 78% Recovery	6.75 – 6.875	‡7.00 – 7.25	7.375

Offers to buy; no sales reported.

NORTH LOUISIANA (F. O. B. Monroe District)

Grade AA	†7.625	7.875	†7.875
Grade BB	†7.125	7.50	†7.625
Grade C	†7.125	7.375	†7.50

CALIFORNIA

75-85, 375-390 e.p. blend	8.00 – 8.50	8.00 – 8.50	7.50 – 8.75

MOTOR FUEL BLENDS

OKLAHOMA

	Prices May 13	Prices May 6	Prices April 29
64-66 Blend 437 e.p.	No quotations	7.50	7.50

BURNING OILS

PENNSYLVANIA

45 w.w. kerosene	7.25 – 7.50	7.25 – 7.75	7.375– 7.75
46 w.w. kerosene	7.50 – 8.00	7.75 – 8.125	7.75 – 8.125
47 w.w. kerosene	8.00 – 8.75	8.50 – 8.75	8.50 – 8.75
300 mineral seal	7.50 – 8.00	7.50 – 8.125	7.50 – 8.125

OKLAHOMA

41-43 w.w. kerosene	5.50 – 5.75	5.75 – 6.125	6.25 – 6.50
42-44 w.w. kerosene	6.00 – 6.25	6.25 – 6.50	6.75 – 7.00

KANSAS (F. O. B. refinery Kansas destination)

41-43 w.w. kerosene	6.00 – 6.25	6.50 – 6.75	6.75 – 6.875
42-44 w.w. kerosene	6.50	6.875– 7.00	7.125

NORTH TEXAS

40-42 w.w. kerosene	5.25	5.75	6.00
41-43 w.w. kerosene	5.25 – 5.50	5.75 – 6.00	6.00 – 6.125

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w.w. kerosene	6.50 – 6.75	7.00 – 7.25	7.00 – 7.25
42-44 w.w. kerosene	6.75	7.00 – 7.25	7.00 – 7.25

ARKANSAS (Arkansas destination only)

42-44 kerosene	6.75	7.00	7.00

CALIFORNIA

38-40 w.w. kerosene	5.25 – 6.00	5.25 – 6.25	6.00 – 6.50

NEUTRAL OIL

PENNSYLVANIA

Vis.	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.	29.50 –30.00	29.50 –30.00	29.50 –30.00
180 No. 3 Assoc. Filt.	25.50 –28.00	25.50 –28.00	26.00 –28.00
150 No. 3 Assoc. Filt.	21.50 –23.00	21.50 –23.00	22.00 –23.00
	(Non Viscous)		
34 Grav. 330-340 Flash	7.00 – 8.50	7.50 – 8.50	7.50 – 9.00

****OKLAHOMA**

Vis.	Color	(Viscosity at 100°F.)		
100	No. 2	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
150	No. 3	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50
150	No. 4	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
180	No. 3	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
180	No. 4	8.75 – 9.75	8.75 – 9.75	8.75 – 9.75
180	No. 5	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
200	No. 3	9.50 –11.00	9.50 –10.00	9.50 –10.00
200	No. 4	9.00 –10.25	10.00 –10.25	9.25 –10.00
200	No. 5	8.75 – 9.50	9.50 –10.00	9.00 – 9.50
220	No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220	No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220	No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240	No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
240	No. 4	12.00 –13.00	12.00 –13.00	12.00 –13.00
240	No. 5	11.00 –13.00	11.00 –13.00	11.00 –13.00
280	No. 3	14.00 –15.50	14.00 –15.50	14.00 –15.50
280	No. 4	13.00 –14.00	13.00 –14.00	13.00 –14.00
280	No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
300	No. 5-6	15.00 –17.00	15.00 –17.00	15.00 –17.00

†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations ***Represents quotations and offers to buy

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL

Vis.	Color	Prices May 13	Prices May 6	Prices April 29
		(Viscosity at 100°F., pour test 0)		
100	No. 2 Pale	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
200	No. 3 Pale	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
300	No. 3 Pale	10.00 –10.50	10.00 –10.50	10.00 –10.50
500	No. 3½ Pale	12.00 –12.50	12.00 –12.50	12.00 –12.50
750	No. 4 Pale	13.00 –13.50	13.00 –13.50	14.00 –14.50
200	No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300	No. 5½ Red Oil	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
500	No. 6 Red Oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750	No. 6 Red Oil	12.00 –12.50	12.00 –12.50	12.00 –12.50

CALIFORNIA

Vis.	Color		(Viscosity at 100°F.)	
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50	11.50	11.50
300	No. 3	13.00	13.00	13.00
450	No. 3	15.50	15.50	15.50
550	No. 3	16.50	16.50	16.50
600	No. 3	17.00	17.00	17.00
200	No. 5	11.00	11.00	11.00
300	No. 5	12.00	12.00	12.00
400	No. 5	14.00	14.00	14.00
500	No. 5	15.00	15.00	15.00
600	No. 5	16.00	16.00	16.00
700	No. 7	18.00	18.00	18.00

CYLINDER STOCKS

**OKLAHOMA

190-200 Vis. at 210° Brt. St.	35.00 –36.00	34.00 –35.00	34.00
150-160 Vis at 210° Brt. St.	33.00 –34.50	32.00 –34.50	32.00 –33.00
600 E. St. 140-150 Vis.-210°	18.00 –20.00	18.00 –20.00	18.00 –20.00
600 St. Ref. Olive Green	12.00 –14.00	10.50 –12.00	10.50 –12.00
600 St. Ref. Dark Green	11.00 –13.00	10.00 –11.00	10.00 –11.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (A. S. T. M. Tests)

600 Steam Refined, filterable	36.00 –37.00	35.00 –37.00	†33.00 –35.00
650 Steam Refined	42.00 –43.00	41.00 –43.00	†38.00 –40.00
600 Flash	45.00	45.00	†41.00 –43.00
625 Flash	No quotations	No quotations	†42.00 –45.00
600 Warren E	37.00 –38.00	37.00 –38.00	†36.00
600 Oil City E	36.00 –37.00	36.00 –37.00	†35.00
600 D Filtered	41.00	41.00	†39.00
Cold Test Stock, 40-50p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	54.00 –58.00	55.00 –57.00	50.00 –52.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	53.00 –56.00	53.00 –56.00	49.00 –51.00

WAX

PENNSYLVANIA Per pound, New York

122-124 white crude scale, a. m. p.	3.25 – 3.50	3.25 – 3.625	3.50 – 3.75
124-126 white crude scale, a. m. p.	3.25 – 3.75	3.25 – 3.75	3.50 – 4.00

‡One seller quoting.

OKLAHOMA

**124-126 White Crude Scale, a. m. p.	3.375– 3.50	3.375– 3.50	3.375– 3.50

CALIFORNIA

White crude scale, per pound, ton lots, a. m. p.	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents both sales and quotations

FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

	Prices May 13	Prices May 6	Prices April 29
36-40 fuel oil	5.375– 5.75	5.50 – 5.75	5.25 – 5.75
30-34 fuel oil	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
28-32 fuel oil	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00

OKLAHOMA

38-40 straw distillate	†3.375– 3.50	†3.375– 3.50	†3.375– 3.50
36-38 straw distillate	†3.25 – 3.375	3.25 – 3.375	†3.25 – 3.375
32-36 gas oil, straw	2.50	2.625	2.625– 2.75
32-36 dark gas oil	2.375– 2.50	2.375– 2.50	2.50
32-36 zero gas oil	2.50	2.625	2.75
28-30 fuel oil (in bbls.)	$0.85 –$0.90	$0.90 – 0.95	$0.90 – 0.95
26-28 fuel oil (in bbls.)	$0.65 – 0.725	$0.725– 0.75	$0.725– 0.75
24-26 fuel oil (in bbls.)	$0.625– 0.675	$0.65 – 0.70	$0.65 – 0.70
22-26 fuel oil (in bbls.)	$0.55 – 0.60	$0.55 – 0.60	$0.55 – 0.60
18-22 fuel oil (in bbls.)	$0.525– 0.575	$0.55 – 0.575	$0.55 – 0.575
16-18 fuel oil (in bbls.)	$0.50 – 0.55	$0.50 – 0.575	$0.50 – 0.575
14-16 fuel oil (in bbls.)	$0.45 – 0.50	$0.50 – 0.55	$0.50 – 0.55

‡Zero cold test gas oil sells for 0.25 cent higher.

KANSAS (F. O. B. refinery Kansas destination)

38-40 straw distillate	3.50	3.50 – 3.625	3.50 – 3.625
36-38 straw distillate	3.375	3.50	3.50
32-36 gas oil	2.375– 2.50	2.50 – 2.625	2.50 – 2.625
24-26 fuel oil	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
18-22 fuel oil	$0.625– 0.70	$0.625– 0.70	$0.625– 0.70

NORTH TEXAS

38-40 straw distillate	3.50	3.75	3.75
32-36 gas oil, cracked	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
32-36 St. reduced gas oil	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
24-26 fuel oil (in bbls.)	$0.60 – 0.65	$0.65 – 0.70	$0.65 – 0.70
20-24 fuel oil	$0.65	$0.65 – 0.675	$0.65 – 0.675

**WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.25 – 2.375	2.375	2.375– 2.50
30-32 gas oil	1.875– 2.00	2.00	2.00 – 2.25
18-22 fuel oil	$0.30	$0.30 – 0.35	$0.30 – 0.40

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	3.00	3.00	3.00 – 3.25
32-36 gas oil, straw	3.00	3.00	3.00 – 3.25
16-20 fuel oil (in bbls.)	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75

ARKANSAS (Arkansas destination only)

32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
28-30 gas oil	2.75	2.875	2.875

CALIFORNIA (F. O. B. San Joaquin Valley. At. San Francisco, 4c per bbl. more)

14-18 fuel oil (per bbl.)	$0.55 –$0.65	$0.55 –$0.65	$0.55 – 0.65
14-18 Bunker oil (per bbl.)	0.70 – 0.80	$0.70 –$0.80	0.65 – 0.80
30-34 gas oil (per bbl.)	$0.90 –$1.05	$0.90 –$1.05	0.90 – 1.05
27 Plus Diesel oil (per bbl.)	$0.90 –$1.00	$0.90 –$1.00	0.90 – 1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars 5/8c to 3/4c per pound less.) Two refiners quoting.

Snow White	8.50	8.50	8.50
Lily White	7.50 – 7.625	7.50 – 7.625	7.50 – 7.625
Cream White	6.50 – 6.625	6.50 – 6.625	6.50 – 6.625
Light Amber	3.625	3.625	3.625
Amber	3.375	3.375	3.375
Red	3.125	3.125	3.125

PETROLEUM COKE

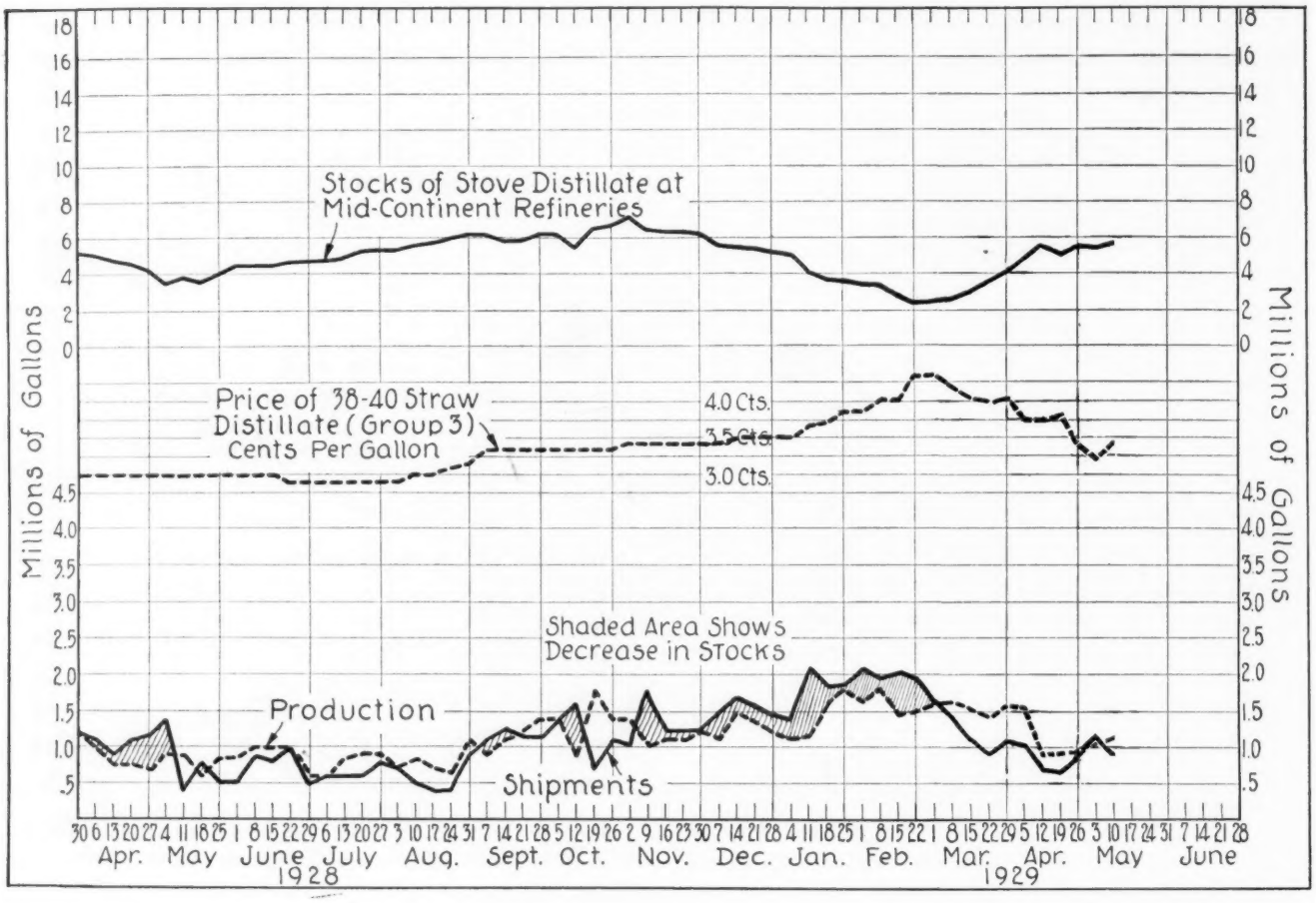
**OKLAHOMA

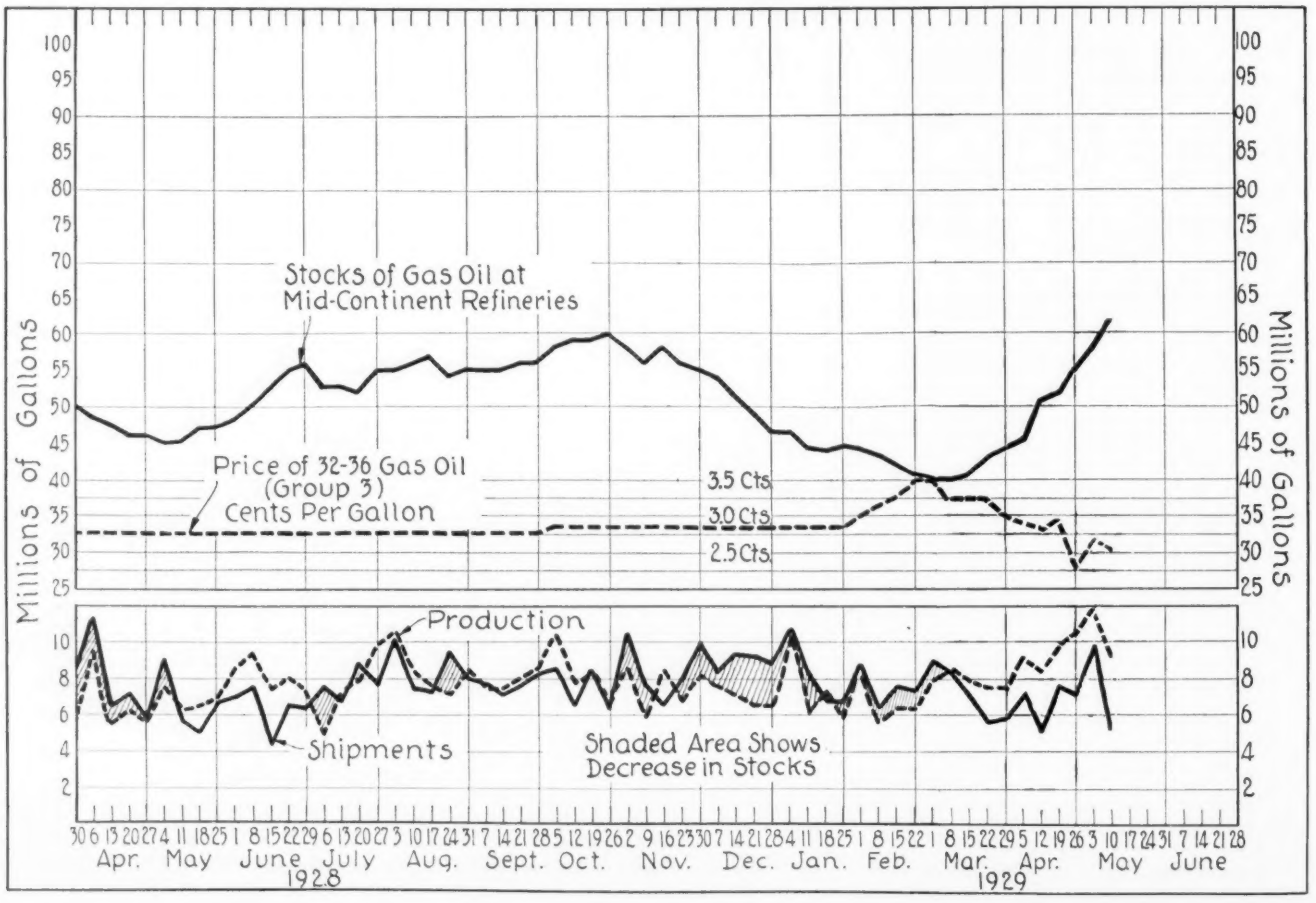
(Per ton in car lots)

Lump	$4.50 –$5.00	$4.50 – 5.00	$4.50 –$5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

Barometer of Mid-Continent Refinery Market—Week Ending May 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News


Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.0 Cts.
3.5 Cts.
3.0 Cts.
Shaded Area Shows Decrease in Stocks
Production
Shipments
Millions of Gallons
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929


Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Millions of Gallons
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

SPECIFICATIONS

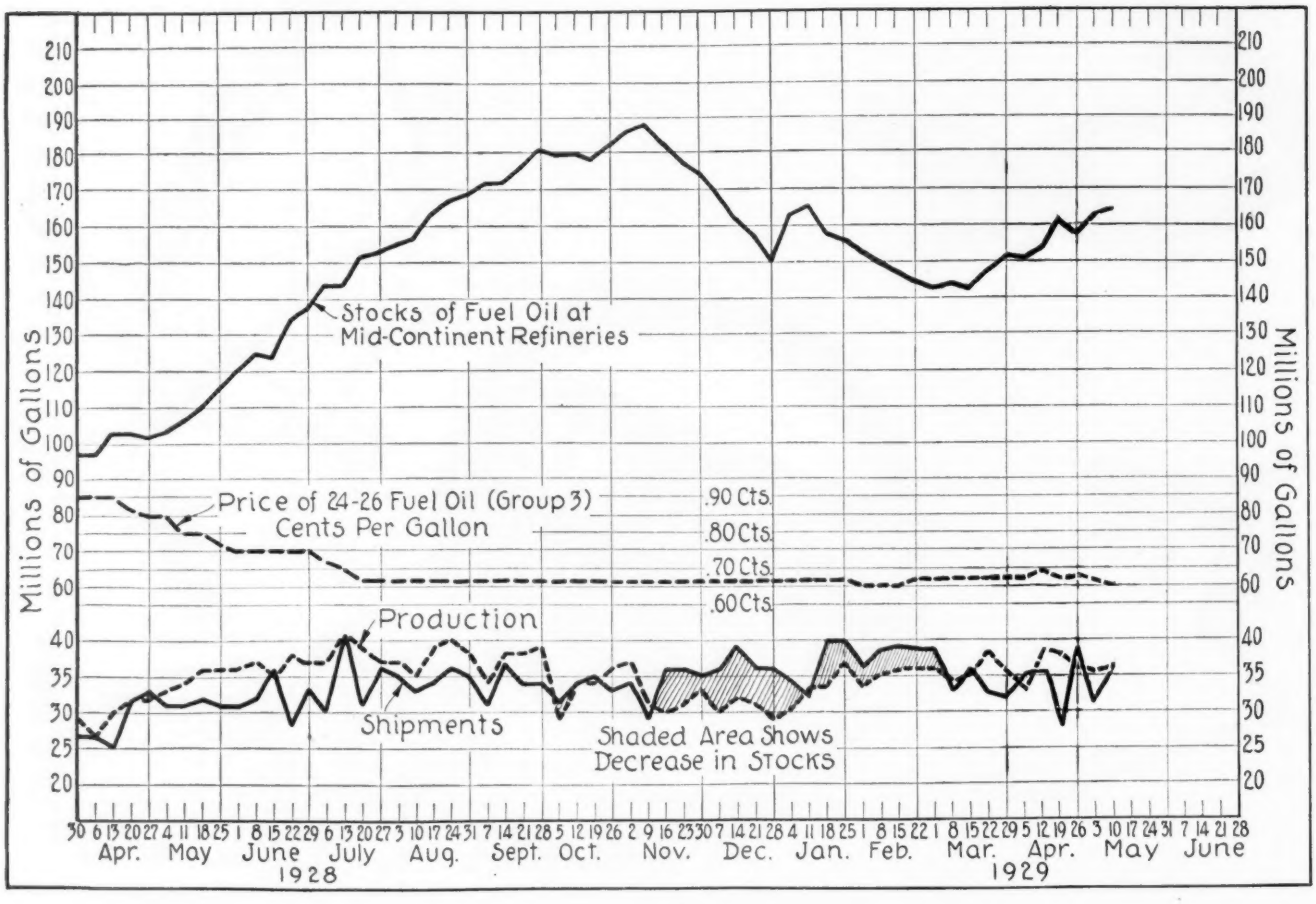
LABORATORY ANALYSIS		WHAT IT MEANS TO YOUR MOTOR
Initial Boiling Point	110 Maximum	Easy starting---First in the get-away---No sputtering
% distilled at 221° Fahr. % distilled at 284° Fahr. % recovery	25 Minimum 52 Minimum 97%	More power, long burning stroke, less gear shifting
End Point	400	Complete vaporization---complete combustion
Doctor Test	OK	Clean odor---never offensive
Corrosion Test	OK	No choking or corrosion of gas line
Color	Plus 25	Highly refined, clean, and clear
Sulphur	less than 1/10 of 1% Max.	No pitting of valves, or fouling of oil
Gum Test	OK	No resinous precipitate to clog carburetor

Humble Oil & Refining Co.

Houston, Texas

Barometer of Mid-Continent Refinery Market—Week Ending May 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News


Millions of Gallons
Millions of Gallons
Stocks of Fuel Oil at Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) Cents Per Gallon
.90 Cts.
.80 Cts.
.70 Cts.
.60 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

California Refinery Market

Local Gasoline Price War Subsides

LOS ANGELES, May 9.

SPOT cargo sales have been few and far between according to reports from local exporters. A large quantity of contract stuff has been moving but eastern buyers apparently are getting their spot requirements from the Gulf and eastern sellers.

California refinery products were more active, especially U. S. Motor gasoline. This grade was higher, ranging from 8.50 to 9 cents, without tax, for shipment in the state, and from 8 to 8.50 cents for shipment out of the state. Several of the trade credited present proration plans and the withdrawal of some surplus gasoline from the market without improving conditions materially.

A few spot sales to Utah and Idaho were reported by one refiner at 8 cents. The same refiner also reported he had offered 1,000,000 gallons to an independent company at the same price.

Fuel oils remained as quoted last week, with very little movement reported. Gas and diesel oils also were slow, although a few spot sales were made at $0.90. Prices on the remaining refinery products were unchanged from previous figures.

In an attempt to thwart action on the part of independent refiners that would throw the local retail gasoline market into another war, the major companies are reported to have agreed to buy the surplus gasoline that is now flooding the market. One major company offered 1.25 cents under the Gulf price for 50,000,000 gallons, with the intention of exporting it.

Station operators selling major gasoline announced an increase May 9 in the retail price, making it 19.50 cents at most points in Los Angeles. This sudden advance is directly opposite to the action taken last week, when prices dropped to 17.50 cents.

An official of one of the major companies gave an intimation of the present trend in the attitude of the "big companies" when he said recently: "We can no longer think of marketing companies as either majors or Independents. A number of the local so-called Independents are in reality well organized and complete companies, actively engaged in all branches of the industry from producing to marketing." He further said that "in order to stabilize marketing conditions we majors cannot look down on the small refiners or think that we can progress without taking them into account."

Independent marketing officials are very optimistic as to the outlook. Many of them feel the need of recuperating from the severe losses incurred during the gasoline war that raged in February and March.

One Independent stated he had suffered a loss of over 1,000,000 gallons during the first quarter of 1929, as compared with his sales during the last quarter of 1928.

Pennsylvania Market

Kerosene and Wax Lower

CLEVELAND, May 13.—Western Pennsylvania markets were generally unchanged last week with prices of all commodities holding at approximately the same levels prevailing the previous week.

Spectacular price advances for steam refined stocks and bright stocks—features of the market since early spring—were lacking last week. There was no let up in demand reported for these oils, but according to the reports of several refiners, goods was a little more freely offered. Many of them reported their outputs of steam refined stocks for the balance of May had been sold. The market, however, continued to be purely a seller's market inasmuch as those with material on hand were not pressed for instructions and demand was such as to prevent any shading of previously paid prices.

A few small lots of 600 steam refined were reported sold at 35 cents a gallon late last week. No goods could be located at this price May 13, however, the minimum quotation being 36 cents. At least two large sellers reported they had several cars to dispose of at this price. Prices for other grades of cylinder stock were mostly nominal. A car of 600 flash was reported sold at 45 cents; quotations for 625 flash could not be obtained, but a seller of 600 flash stock at 45 cents stated he would have to get 50 cents for 625 flash to warrant his making it.

Bright stock demand quieted down a bit but no recession in prices was reported as a consequence. No. 8 color stock was quoted at 54 to 58 cents a gallon with sales reported at from 54 to 57 cents. No. 6 to 6½ color diluted oil was quoted at 52.50 cents, minimum. Several sellers were asking 56 cents, the same price they quoted for No. 8 color.

Unfavorable motoring weather kept gasoline and kerosene from moving forward last week as a good many of the trade had anticipated. Shipments of gasoline under contract continued good, most sellers reported, but spot demand was negligible. The 58-60 U. S. Motor gasoline was offered at frequent intervals at 9.25 cents by a comparatively few sellers; the minimum quotation for this grade May 13, however, was 9.50 cents although the opinion was expressed in some districts that a buyer might better this figure if he did some shopping around.

Some distress kerosene appeared in the market last week but in the total volume of low priced stuff sold was insufficient to be representative of the general market.

Show Originality—Color Yours Differently

Color your anti-knock or high test gasoline an attractive shade by which the public will recognize and remember your good product.

DYKEM GASOLINE COLORS

Made to stay in gasoline; simple, safe, economical.

Several Shades of

RED GREEN BLUE
ORANGE PURPLE

Write for price and sample of shade you prefer.

DYESTUFFS & CHEMICALS, INCORPORATED
11th & Monroe Sts. **St. Louis, Mo.**

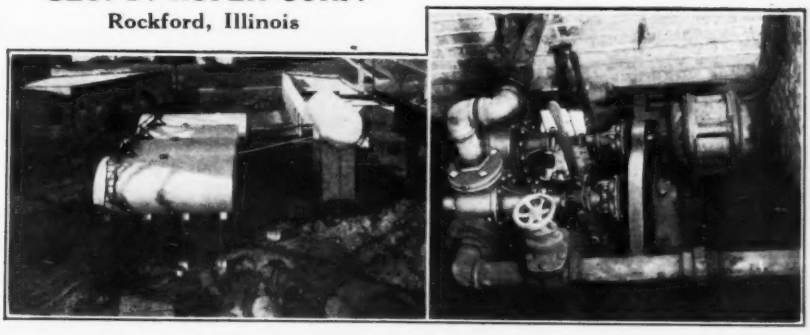
Another Faithful TRAHERN

The TRAHERN Rotary Pump shown below, has been giving unfailing service for three years, and is still operating satisfactorily. It is at a bulk plant, unloading gasoline from tank cars and transferring to overhead storage tanks.

Let us quote you on the next pumps you buy. The TRAHERN will give you trouble-proof pump service at high efficiency and at a cost far below your expectations.

Write for New Rotary Pump Catalog No. 54

GEO. D. ROPER CORP.
Rockford, Illinois



New York Domestic Market

Gasoline Moving Well; Kerosene Off

Staff Special

NEW YORK, May 11

THERE has been little change in markets along the Eastern seaboard the past week, either in prices or conditions. With return of better weather toward the latter part of the week gasoline demand was better and consumption increased accordingly.

Refiners at New York were obtaining 9 to 9.25 cents per gallon for U. S. Motor with possibly one exception. One refiner was quoting 9.50 cents a gallon for shipment over the rest of the month. Others were not taking orders for deferred shipment.

Higher prices have been the subject of conversation among the trade for the past several days, but with two of the largest eastern refiners quoting 9 and 9.25 cents, prices have remained at last week's levels. In discussing the situation one of these refiners indicated that while the market was in excellent shape the best way to keep it there was to advance prices slowly and keep the gasoline moving. Another refiner who is obtaining an average of 9.125 cents per gallon, remarked that he felt the market was due for an increase and that it warranted it, but that it would be impracticable until the lead was taken by these two controlling factors. One other refiner reported that he was well booked with orders and would take no business at 9.25 cents. Another said that while the market was in good shape he couldn't get more than 9 cents for his gasoline.

The feeling that prevails in New York markets also is being advanced by sellers in other districts. A further feeling of confidence was given New England suppliers when the Standard Oil Co. of New York, May 9, advanced tank wagon and service station prices of gasoline at New Haven, Conn. The trade believes that other advances will follow, bringing points that have been out of line back to normal schedules.

California gasoline has also been moving well and all sellers are obtaining 9.50 cents. Some talk has been heard of 10 cents for this grade of goods but there have been no sales checked at that figure as yet. One seller was of the opinion that 10-cent gasoline was not many days away, however.

It is interesting to note that a marketer of California gasoline who operates a chain of filling stations in the East, has been reported to have bought in excess of 320,000 barrels, part of which has already been shipped and the remainder of which will be shipped during June and July. The information came from a seller who supplied part of the goods and he said that his cargo of 75,000 barrels was ordered to be shipped immediately. It is presumed that the buyer is storing the gasoline in anticipation of higher prices this summer.

Kerosenes have taken an entirely different course from gasoline. While prices have not fluctuated from last week, the market has been reported easier with possibly some shading of 8 cents at New York. One seller who reported last week that his price was 8.50 cents, early this week stated that he had come down in line with the other refiners.

Fuel oil prices have remained steady although all sellers have reported that demand has been light.

Gulf Export Market

French Buyers Take Three Cargoes

Staff Special

NEW YORK, May 11

THE gasoline and kerosene market at the Gulf the past week was comparatively inactive, the only bright spots being the entrance of three inquiries two of which resulted in sales. Prices for all commodities were unchanged.

The inquiries came into the market May 7 and 8 and were from French buyers, one of them a subsidiary of a leading American refiner. One inquiry was for approximately 65,000 barrels of 64-66, 375 end point gasoline and 41-43 prime white kerosene for loading June 15-July 15, either at the Gulf or a north Atlantic port. The cargo was purchased two days later at 10 cents and 7.75 cents, respectively.

Another inquiry which also resulted in a sale two days after it came in the market, was for approximately 30,000 barrels of 64-66, 375 end point gasoline for June loading either at the Gulf or north Atlantic port. The third inquiry which was still open May 11, was for approximately 50,000 barrels of U. S. Motor and 64-66, 375 end point gasoline for loading within the next 60 days.

Early in the week it was reported that an inquiry which came into the market the week prior, had been placed. However, confirmation of the sale could not be obtained. The buyer was seeking from 24,000 to 32,000 barrels of U. S. Motor and 64-66, 375 end point gasoline.

While there was not a great deal of interest displayed, the market continued in good shape and the trade talked higher prices. From one source came the information that the Petroleum Export Association was expected to post higher prices on gasoline within the next week or 10 days. High gravity goods was expected to be advanced 0.50 cent and U. S. Motor from 0.25 to 0.50 cent. In referring to an increase suppliers pointed to Mid-Continent U. S. Motor which they claim, cannot be laid down at the Gulf much under 9.25 cents, 0.75 of a cent higher than the price they are obtaining for U. S. Motor.

Gasoline only will receive the increase if one is made. Kerosene prices are expected to be lower. There has been only a small amount of activity in kerosene and, as prices have become lower in other districts, they are naturally expected to fall off some at the Gulf.

Fuel oil has been fairly active and that market is in excellent shape. One seller said his explanation for the healthiness of the market was not so much because of the activity in it, but rather because the output has been restricted. At least there was not the amount of Venezuelan fuel oil being offered on the market as there has been at other times. Crude output there is being restricted to 1928 levels.

The domestic market at the Gulf has been inactive as far as prices have been concerned. U. S. Motor continues to sell at 8 cents, kerosene at 7.25 cents and gas oil at 4 cents. A slight increase in gasoline demand has been the only high spot in the market.

Wax Market

White Crude Scale Lower

NEW YORK, May 11.—Wax prices were lower at the end of the past week, a result of continued inactivity. Only small orders were placed during the week, the trade reported, and a majority of those were for domestic shipment.

White crude scale, both 122-124 A.m.p. and 124-126 A.m.p. grades was quoted at 3.375 cents as the general low figure and 3.625 cents high. Fully refined goods were from 0.125 to 0.25 of a cent lower. Yellow crude scale was selling at 3.25 to 3.50 cents.

Various reports were heard as to prices and market conditions May 11. Generally, however, sellers reported that the market was "slow." One seller reported that he had heard of some white crude scale business being placed early in the week at 3.75 cents although there were no sales checked at that figure May 11. This same seller's price was 3.50 cents. Another dealer, one of the largest in the East said he had sold some white crude scale May 11, at 3.625 cents and that he considered himself fortunate in getting this price. Most of his goods had moved at 3.50 cents. One sale was checked Friday at 3.375 cents, and Saturday, it was the opinion of several of the trade that with a firm offer that figure might be shaded.

Fully refined goods are in a different position than white crude scale inasmuch as there is a smaller amount of the higher melting point material manufactured. One seller reported that he expected to see those prices advance shortly in spite of the present condition of the market. Lower melting point fully refined wax, was looked at differently however, and increases in prices were not expected for the near future.

A different light was thrown on the position of Polish refiners and their stock of waxes, Saturday. One wax dealer in the United States said that he had received a letter from an English concern stating that Polish sellers were now quoting higher prices than American refiners and that their stocks were not heavy as had been the general belief. It has been the opinion that Polish refiners were underbidding American refiners and that they had considerable goods in storage.

LOUISVILLE, May 10.—Stoll Oil Refining Co. here has purchased the drive-in service station in Winchester, Ky., formerly owned by Botner Bros., according to William A. Stoll, secretary-treasurer.

SUPER-STATIONS
Demand the Best

We have some desirable territory open for aggressive sales representatives. Write for details.

Milestone Meters are used in many Super-Stations because they render that high type of service that is symbolic of "ONE STOP" Stations. Motorists obtain accurate and faster service where Milestone Meters are used.

Major oil companies are using Milestone Cabinet and Masonry Type Units in their Super-Stations.

Write for Circular and Prices

Count on
MILESTONES
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Cabinet and Masonry Types

MILESTONE METER SYSTEMS, INC.
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PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes
For Domestic or Export

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
CYLINDER STOCKS
UNFILTERED AND FILTERED
BRIGHT STOCKS
COLD SETTLED AND CENTRIFUGED
PALE — RED OILS
WAX — PETROLATUM
TECHNICAL WHITE OILS
WHITE MINERAL OILS

For 35 years of reliability, service and integrity—this Company enjoys an International Reputation

JAMES B. BERRY SONS' CO., INC.
General Office—Oil City, Pa.

District Offices at
New York, Philadelphia, Boston, Chicago
London — Hamburg

Cable Address—JASBER Oil City *All Codes*

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

	May 13	May 6	April 29
U. S. MOTOR GASOLINE			
New York harbor	9.00 – 9.25	9.00 – 9.25	9.00 – 9.25
Portland district	**11.375–11.50	**11.375–11.50	**11.00–11.375
Boston district	**10.875–11.00	**10.875–11.00	**10.75–10.875
Providence district	**10.875–11.00	**10.875–11.00	**10.75–10.875
Philadelphia district	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
Baltimore district	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
Norfolk district	9.00 – 9.50	9.00 – 9.50	9.00
Charleston district	9.00	9.00	9.00
Savannah district	9.00	9.00	9.00
Jacksonville district	9.00	9.00	9.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	9.50	9.50	9.50
Philadelphia district	9.50	9.50	9.00 – 9.50
Baltimore district	9.50	9.50	9.25 – 9.50
WATER WHITE KEROSENE			
New York harbor	8.00	8.00	8.00
Philadelphia district	8.00	8.00	8.00
Baltimore district	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Boston district	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
Boston district	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
GRADE C BUNKER OIL†			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10
MEDICINAL OILS, RUSSIAN			
885-890 s.g., 325-330 vis.	$0.75 – 0.80	$0.75 – 0.80	$0.75 – 0.80
870-875 s.g., 150-155 vis.	$0.65 – 0.70	$0.65 – 0.70	$0.65 – 0.70

Note: Above gasoline prices do not include inspection tax levied in some states
*Minimum delivered. **Delivered prices. †Lighterage 5c per bbl. additional

New York Export Market

(Lubricating oils are per gal. in bbls.)

	May 13	May 6	April 29
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	*62.00 –63.00	*56.00	*55.00 –56.00
600 D filtered	*48.00	*46.00 –48.00	*43.00
600 Warren E filtered	*44.00 –46.00	*44.00 –46.00	*40.00
600 s.r. unfiltered	*40.00 –43.00	*41.00 –42.00	*38.00 –40.00
650 s.r., unfiltered	*48.00	*47.00 –48.00	*45.00
600 flash, s.r.	*50.00 –51.00	*48.00 –49.00	*46.00
630 flash, s.r.	*53.00 –54.00	*53.00 –54.00	*50.00 –52.00
*Nominal			
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00	20.00	20.00
250 vis. No. 6 color	19.50	19.50	19.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.00	19.00	19.00
100 vis. No. 2¼ color	16.00	16.00	16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	33.00	33.00	33.00
500 vis. No. 6½ color	31.00	31.00	31.00
400 vis. No. 7¼ color	30.00	30.00	30.00
300 vis. No. 6 color	29.00	29.00	29.00
200 vis. No. 6 color	28.00	28.00	28.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	3.375– 3.625	3.50 – 3.75	3.375– 3.75
124-126 A.m.p.	3.375– 3.625	3.50 – 3.875	3.50 – 3.875
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.375– 4.625	4.50 – 4.75	4.50 – 4.75
125-127 A.m.p.	4.50 – 4.625	4.50 – 4.75	4.50 – 4.75
128-130 A.m.p.	4.625– 5.00	4.625– 5.125	4.625– 5.125
130-132 A.m.p.	5.75 – 6.00	5.875– 6.00	5.875– 6.00
133-135 A.m.p.	6.00 – 6.25	6.125– 6.25	6.125– 6.25
135-137 A.m.p.	6.50 – 6.75	6.50 – 6.875	6.50 – 6.75
YELLOW CRUDE SCALE			
124-126 A.m.p.	3.25 – 3.50	3.375– 3.625	3.375– 3.625

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted and for export shipment only).

	May 13	May 6	April 29
GASOLINE			
U. S. Motor	8.50	8.50	8.50
60-62 400 e.p.	9.50	9.50	9.50
61-63, 390 e.p.	9.75	9.75	9.75
64-66, 375 e.p.	10.00	10.00	10.00
U. S. Motor, cases (cargoes)	$1.75	$1.75	$1.75
64-66, cases (cargoes)	$1.90	$1.90	$1.90
KEROSENE			
44 water white	8.75	8.75	8.75
41-43 prime white	7.75	7.75	7.75
Water white, cases (cargoes)	$1.80	$1.80	$1.80
Prime white, cases (cargoes)	$1.70	$1.70	$1.70
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.875– 4.00	3.875– 4.00	3.875– 4.00
*30 plus translucent gas oil	4.00	4.00	4.00
Grade C bunker oil	$0.875–$0.95	$0.875–$0.95	$0.875–$0.95
Grade C bunker oil, cargoes	$0.75 – 0.80	$0.75 – 0.80	$0.75 – 0.80
*Less than ½ of 1% sulfur.			
MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.65	$0.65	$0.65
Grade C bunker oil, for bunkering purposes, taxes paid	$0.85	$0.85	$0.85
SOUTH TEXAS LUBRICATING OILS, (Viscosity at 100° F.: cold test 0) (Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
200 vis. No. 3 unfiltered pale	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
300 vis. No. 3 unfiltered pale	9.00 –10.00	9.00 –10.00	9.00 –10.00
500 vis. No. 3½ unfiltered pale	10.50 –11.00	10.50 –11.00	10.50 –11.00
750 vis. No. 4 unfiltered pale	13.00 –13.25	13.00 –13.25	13.00 –13.25
1200 vis. No. 5 unfiltered pale	16.00 –17.00	16.00 –17.00	16.00 –17.00
200 vis. No. 5-6 red oil	7.50	7.50	7.50
300 vis. No. 5-6 red oil	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
500 vis. No. 5-6 red oil	9.50 –10.50	9.50 –10.50	9.50 –10.50
750 vis. No. 5-6 red oil	11.50 –12.00	11.50 –12.00	11.50 –12.00
1200 vis. No. 5-6 red oil	16.50	16.50	16.50

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only).

	May 13	May 6	April 29
U. S. Motor gasoline	8.00	8.00	7.875
41-43 w.w. kerosene	7.25	7.25	7.25
*26-32 translucent gas oil	4.00	4.00	4.00
*Less than ½ of 1% sulfur.			

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	May 13	May 6	April 29
Gasoline, U. S. Motor, 53-55 Gravity	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
Gasoline, U. S. Motor, blends and special cuts	7.50 –10.00	7.50 –10.00	7.50 –10.00
Gas Oil, 30-34, per barrel	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Diesel Oil, 27 plus, per barrel	$0.875–$1.00	$0.875–$1.00	$0.875–$1.00
Bunker oil, 14-18, per barrel	$0.70 –$0.85	$0.70 –$0.85	$0.70 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.50 – 6.25	5.50 – 6.25	5.50 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

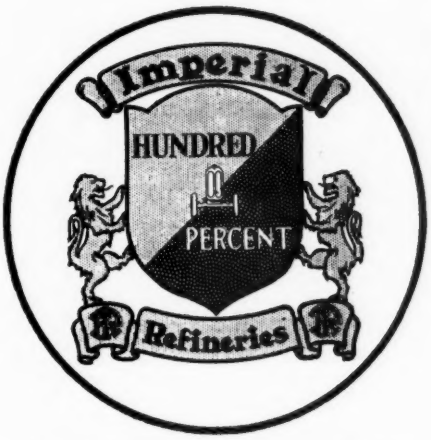
(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	May 13	
	Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	28–29	28
Gulf to U. K. or Continental ports*	18	18–18/6
North Atlantic to U. K. or Continental ports*	16	16–16/6
Calif. to North Atlantic ports (not E. of N. Y.)	65	$1.00–$1.05
Gulf to North Atlantic ports (not E. of N. Y.)**	21	35–40

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.
**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.

IMPERIAL

Premium Gasolines and Quality Products



A Premium Automotive Fuel

SPECIFICATIONS

Gravity; 54-56 A. P. I.
Color; Water White
Odor; Sweet
Doctor Test; Negative
Corrosion; Good
Sulphur; Under 0.1%
Gum Test; O. K.
Benzol Equivalent 50%

Distillation

I. P. Under	104°F
10%	167°F
50%	275°F
90%	365°F
E. P. Under	400°F

Quality Products

Gasolines

- U. S. Motor
- High Test
- High Compression
- Aviation

Kerosenes

Tractor Fuels

Furnace Oils

Gas Oils

Fuel Oils

Road Oils

Lubricating Oils

A Premium Aviation Fuel

SPECIFICATIONS

Gravity; 66-70 A. P. I.
Color; Water White
Odor; Sweet
Doctor Test; Negative
Corrosion; Good
Sulphur; Under 0.1%
Gum Test; O. K.
Benzol Equivalent 30%

Distillation

I. P. Under	95-104°F
10%	140°F
50%	221°F
90%	311°F
E. P. Under	360°F

Imperial Refineries

Imperial Refining Co. **San Angelo Refining Co.**
Kettle Creek Refining Co. **Wickett Refining Co.**

General Offices
TULSA, OKLAHOMA

Tank Wagon Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect May 13, 1929, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantit City, N. J.	12	2	14	18	13
Newark, N. J.	14	2	16	20	13
Annapolis, Md.	14	4	18	22	13
Baltimore, Md.	14	4	18	22	12
Cumberland, Md.	14	4	18	22	13
Washington, D. C.	14	2	16	20	12
Danville, Va.	14	5	19	23	13
Norfolk, Va.	14	5	19	23	13
Richmond, Va.	14	5	19	23	13
Roanoke, Va.	14	5	19	23	13
Petersburg, Va.	14	5	19	23	13
Charleston, W. Va.	14	4	18	22	13
Keyser, W. Va.	14	4	18	22	13
Parkersburg, W. Va.	14	4	18	22	13
Wheeling, W. Va.	14	4	18	22	13
Charlotte, N. C.	14	5	19	23	13
Hickory, N. C.	14	5	19	23	13
Mt. Airy, N. C.	14	5	19	23	13
Salisbury, N. C.	14	5	19	21	13
Charleston, S. C.	14	6	20	24	13
Columbia, S. C.	14	6	20	24	13

CONTINENTAL OIL

Denver, Colo.	15	4	19	22	15.5
Pueblo, Colo.	15	4	19	22	15.5
Grand Junc., Colo.	18.5	4	22.5	25.5	19
Casper, Wyo.	15	4	19	22	14
Cheyenne, Wyo.	16	4	20	23	15.5
Butte, Mont.	19.5	5	24.5	27.5	20
Helena, Mont.	19.5	5	24.5	27.5	20
Salt Lake City, Utah	17.5	3½	21	24	17
Boise, Ida.	19.5	4	23.5	26.5	19
Twin Falls, Ida.	19.5	4	23.5	26.5	19
Albuquerque, N. M.	15	5	20	23	17

S. O. CALIFORNIA

Phoenix, Ariz.	14	4	18	22	21.5
Los Angeles, Cal.	15.5	3	18.5	22.5	15.5
Fresno, Cal.	16	3	19	23	16.5
San Francisco, Cal.	16	3	19	23	15.5
Reno, Nev.	20	4	24	28	19
Portland, Ore.	16.5	3	19.5	23.5	16.5
Seattle, Wash.	16.5	2	18.5	22.5	16.5
Spokane, Wash.	20.5	2	22.5	26.5	20.5
Tacoma, Wash.	16.5	2	18.5	22.5	16.5

Note: 3c per gal. discount to dealers off t.w. price thru territory.

S. O. LOUISIANA

Little Rock, Ark.	13	5	18	22	13
Alexandria, La.	12	4	16	20	†16
Baton Rouge, La.	11	4	15	19	†14.5
Lake Charles, La.	††13.5	4	††17.5	††21.5	†16
New Orleans, La.	*12.5	4	*16.5	20.5	†16
Shreveport, La.	12	4	16	20	†15
Lafayette, La.	**13	4	**17	**21	†14
Bristol, Tenn.	15	5	20	23	14
Chattanooga, Tenn.	14.5	5	19.5	23.5	16
Knoxville, Tenn.	15	5	20	24	16
Nashville, Tenn.	12	5	17	21	16
Memphis, Tenn.	11	5	16	20	12.5

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

**Lafayette gasoline prices include 1c parish tax in addition to 4c state tax.

††Lake Charles gasoline prices include 1c parish tax.

S. O. KENTUCKY

Ashland, Ky.	13	5	18	19	15.5
Catlettsburg, Ky.	13	5	18	19	15.5
Lexington, Ky.	15	5	20	22	15.5
Louisville, Ky.	15	5	20	22	15
Covington, Ky.	15	5	20	21	15.5
Clarksdale, Miss.	14	5	19	21	12.5
Gulfport, Miss.††	17.5	5	22.5	24.5	14
Jackson, Miss.	13	5	18	20	13
Natchez, Miss.	15.5	5	20.5	22.5	14
Vicksburg, Miss.	13.5	5	18.5	20.5	14
Birmingham, Ala.	14	4	18	20	13
Mobile, Ala.‡	17	4	21	23	15
Montgomery, Ala.*	16	4	20	22	16.5
Atlanta, Ga.	17	4	21	23	†16.5
Augusta, Ga.	17	4	21	21	†15.5
Macon, Ga.	15	4	19	21	†16.5
Savannah, Ga.	16	4	20	22	†15.5
Jacksonville, Fla.	17	5	22	24	14.5
Miami, Fla.	18	5	23	25	15.5
Tampa, Fla.	17	5	22	24	14.5
Pensacola, Fla.**	18	5	23	25	14.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

Latest Changes In Tank Wagon Prices

Gasoline Changes

Atlantic Refining—T.w. price up 1c, s.s. 2c, New Haven, to 18c and 20c respectively, including 2c state tax, **May 9.** Similar advance first announced by S. O. New York on May 7.

S. O. Kentucky—T.w. and s.s. gasoline cut 1c, Ashland and Catlettsburg, to 18c and 19c respectively, including 5c tax, **May 8.**

T.w. and s.s. cut 2c at these points: Vicksburg and Clarksdale, Miss., **April 15**; Jackson, Miss. and Montgomery, Ala., **April 19**; Macon, Ga., **April 24.** Prices published in the tank wagon table of this issue are corrected to show the new prices, which are the prices that should have been shown in all issues following the respective dates of change mentioned above.

S. O. Ohio—T.w. price only up 1c, Wapakoneta, Urbana and Jamestown to 18c, including 4c tax, **May 8.** S.s. unchanged at 18c.

T.w. and s.s. gasoline up 1c, East Liverpool and Wellsville, bringing entire Columbiana county to state-wide price schedule of 19c t.w. and 20c s.s., including 4c tax, **May 8.**

Magnolia Petroleum—T.w. and s.s. cut 1c, Muskogee, to 13c and 17c respectively including 3c tax, **May 7.**

Canada—T.w. and s.s. gasoline cut 1c, Quebec City, to 25.5c and 29c respectively, including 5c tax, **April 29.**

S. O. NEBRASKA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Omaha, Neb.	14.25	4	18.25	20.25	13.25
McCook	15.75	4	19.75	21.75	14.75
Norfolk	14.75	4	18.75	20.75	13.75
North Platte	15.75	4	19.75	21.75	14.50
Scottsbluff	15.75	4	19.75	21.75	14.25

S. O. INDIANA

Chicago, Ill.	14	0	14	15	13
Decatur, Ill.	14.2	0	14.2	15.2	13.1
E. St. Louis, Ill.	13.4	0	13.4	14.4	12.2
Joliet, Ill.	14.4	0	14.4	15.4	13.3
Peoria, Ill.	14.2	0	14.2	14	13.1
Quincy, Ill.	14.2	0	14.2	15.2	12.9
Indianapolis, Ind.	14.2	4	18.2	19.2	14.2
Evansville, Ind.	14	4	18	19	14
South Bend, Ind.	14.4	4	18.4	19.4	14.4
Detroit, Mich.	14.8	3	17.8	18.8	14.7
Grand Rapids, Mich.	14.7	3	17.7	18.7	14.6
Saginaw, Mich.	14.9	3	17.9	18.9	14.8
Green Bay, Wis.	14.6	2	16.6	17.6	13.4
Madison, Wis.	14.3	2	16.3	17.3	13.1
Milwaukee, Wis.	14.1	2	16.1	17.1	12.9
La Crosse, Wis.	15.2	2	17.2	18.2	14
Minneapolis, Minn.	15.2	3	18.2	19.2	13.9
Duluth, Minn.	15.5	3	18.5	19.5	13.9
Mankato, Minn.	15.1	3	18.1	19.1	13.7
Des Moines, Ia.	14.5	3	17.5	18.5	13.3
Davenport, Ia.	14.5	3	17.5	18.5	13.3
Sioux City, Ia.	14.1	3	17.1	18.1	12.9
Mason City, Ia.	14.5	3	17.5	18.5	13.3
St. Louis, Mo.	*13.9	2	15.9	16.9	12.3
Kansas City, Mo.	†14.9	2	16.9	17.9	11.6
St. Joseph, Mo.	†14.5	2	16.5	17.5	12.2
Fargo, N. D.	16.9	2	18.9	19.9	15.9
Grand Forks, N. D.	17.2	2	19.2	20.2	16.2
Minot, N. D.	16.9	2	18.9	19.9	15.9
Pierre, S. D.	15	4	19	20	14.4
Huron, S. D.	15.3	4	19.3	20.3	14.7
Wichita, Kans.	12.8	3	15.8	16.8	11.8
Bartlesville, Okla.	12.5	3	15.5	16.5	11.5

S. O. Indiana's quantity contract price schedule thru territory except Chicago on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Wilmington, O.	*12	4	*16	16	14
Fayette & Tuscarawas counties, Hamilton, Findlay, Wapakoneta, Urbana, Jamestown	**14	4	**18	18	14
†At Other Competitive Points	*14	4	*18	19	14
Elsewhere in Ohio	*15	4	*19	20	14

†These points are: all of Franklin county, including Columbus, Westerville, Worthington and Rome; all of Scioto county, including Portsmouth; Fairfield county, including Lancaster; and these additional points: Marion, Lima, Perrysburg, Bryan, Hicksville, Mansfield, Celina, Fostoria, Piqua and Piketon.

*Dealers and commercial accounts get 2c per gal. off t.w. price.

**Dealer and commercial consumers' discount at these points is 3c per gal. off tank wagon price.

MAGNOLIA PETROLEUM

Muskogee, Okla.	10	3	13	17	13
Oklahoma City.	10	3	13	17	12
Tulsa, Okla.	11	3	14	18	10
Fort Smith, Ark.†	12	†3	15	19	12
Little Rock, Ark.	12	5	17	21	13
Texarkana, Ark.*	12	*2	14	18	13
Dallas, Tex.	11	2	13	17	13
Fort Worth, Tex.	11	2	13	16	13
Houston, Tex.	12	2	14	18	13
San Antonio, Tex.	11	2	13	17	12
El Paso, Tex.	15	2	17	20	16

*Within city of Texarkana, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 3c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	2	19	*21	15
Albany, N. Y.	13	2	15	16	15
Buffalo, N. Y.	14	2	16	17	14
Rochester, N. Y.	14	2	16	17	13
Syracuse, N. Y.	14	2	16	17	12
Boston, Mass.	16	2	18	20	15
Augusta, Me.	16	4	20	22	15
Manchester, N. H.	16	4	20	22	15
Burlington, Vt.	16	4	20	22	15

Note: S. O. New York allows concessions of 1 to 2c per gal. to dealers under posted tank wagon prices.

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York selling Socony gasoline.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/50c on both; Nebraska, 3/50c to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect May 13, 1929

ATLANTIC REFINING

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Pittsburgh, Pa.	†16	*	†16	21	14
Philadelphia, Pa.	†16	*	†16	21	14
Allentown, Pa.	†16	*	†16	21	14
Erie, Pa.	†13	*	†13	18	14
Scranton, Pa.	†16	*	†16	21	14
Altoona, Pa.	†16	*	†16	21	14
Dover, Del.	†16	3	†19	21	14
Wilmington, Del.	†16	3	†19	21	14
Boston, Mass.	16	2	18	20	15
Springfield, Mass.	16	2	18	20	15
Worcester, Mass.	16	2	18	20	15
Fall River, Mass.	14	2	16	17	15
Providence, R. I.	13	2	15	16	15
Hartford, Conn.	16	2	18	20	14
New Haven, Conn.	16	2	18	20	15
Atlantic City, N. J.	16	2	18	20	13
Camden, N. J.	16	2	18	20	13
Trenton, N. J.	16	2	18	20	13
Annapolis, Md.	16	4	20	22	13
Baltimore, Md.	16	4	20	22	13
Hagerstown, Md.	16	4	20	22	13
Richmond, Va.	16	5	21	23	13
Wilmington, N. C.	16	4	20	22	13
Brunswick, Ga.	17	4	21	23	**16.5
Jacksonville, Fla.	17	5	22	24	14.5

*3-cent state tax is collected by retail dealer and paid by him directly to state.

†The Atlantic Refg Co. recognizes a 2c a gal. discount from its posted tank wagon market on sales to dealers for purposes of resale.

The company also recognizes a maximum discount of 2c per gallon to commercial accounts under contract for one year.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		17	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.

Petroleum Spirits

Tank Cars (Solvent)	
New York refineries	11.50
Philadelphia refineries	11.50
Tank Wagon or Steel Barrels	
New York City	17
New England	19
New Jersey	16
Pennsylvania	16–18

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline				Oil
	T.W.	Tax	T.W.	S.S.	T.W
ONTARIO					
Toronto	19.5	5	24.5	28	21
Ottawa	13.5	5	18.5	22	21
Cochrane	24.5	5	29.5	..	26
Ft. William	22.5	5	27.5	31	22.5
MANITOBA					
Winnipeg	21.5	3	24.5	28	21.5
SASKATCHEWAN					
Regina	26	3	29	33	26
ALBERTA					
Edmonton	27.5	3	30.5	34	27.5
Calgary	23.5	3	26.5	30	23.5
BRITISH COLUMBIA					
Vancouver	22	3	25	29	23
QUEBEC					
Montreal	19.5	5	24.5	28	22
Quebec City	20.5	5	25.5	29	23
Three Rivers	21.5	5	26.5	30	23
NEW BRUNSWICK					
St. John	24	5	29	33	25
Moncton	24	5	29	33	25
NOVA SCOTIA					
Halifax	24	5	29	33	25
Sydney	24	5	29	33	25
PRINCE EDWARD ISLAND					
Charlottetown	24	5	29	33	25

Note: In districts surrounding these points 1c additional is added to city price.

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Is As Good As Money In The Bank
Save Your Oil, Until Sold in
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When your speedometer reads 10,000 does your motor run like 30,000?

At 10,000 miles a motor should be at its best—lively, responsive, silent. But many are sluggish.
Where does a motor first show its age? Mechanics say bearings, cylinder walls and pistons first show the ravages of time—and poor oil.
Modern motors are demanding more of lubricants, are exerting new abuses on motor oil more damaging than ever before.
Skelly Oil Company has made The New TAGOLENE to promote longer motor life, to cut down upkeep costs, made it with extra lubrication value—to sell at 30 cents a quart.
Build your oil sales with this new-type lubricant. Nowhere can your customers buy as much for 30 cents a quart.

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THE NEW
TAGOLENE
MOTOR OIL
MADE TO STAND ABUSE

Crude Oil Prices (in Effect May 13, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$4.10
Bradford District Oil in National Transit Lines (Bradford District)	4.10
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.90
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.85
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.50
Corning Grade in Buckeye Pipe Lines (Ohio)	1.75
Corning, O., heavy grade	1.65
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.65
Ragland Grade in Eureka Pipe Lines (Kentucky)	$0.60

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.65

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective April 26, 1929

Wooster	$1.75	Princeton	$1.60
Lima	1.65	Illinois	1.60
Waterloo	1.20	Plymouth	1.18
Indiana	1.42	West Kentucky	1.68

Pure Oil Co.

Midland, Midland County, Michigan	$1.50

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$1.90
Oil Springs	1.97

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Jan. 25, 1929

Below 25	$0.60	35-35.9	$1.17
25-25.9	0.66	36-36.9	1.20
26-26.9	0.72	37-37.9	1.23
27-27.9	0.78	38-38.9	1.26
28-28.9	0.84	39-39.9	1.29
29-29.9	0.90	40-40.9	1.32
30-30.9	0.96	41-41.9	1.35
31-31.9	1.02	42-42.9	1.38
32-32.9	1.08	43-43.9	1.41
33-33.9	1.11	44 and above	1.44
34-34.9	1.14		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Jan. 24, 1929, same schedule as Prairie in above fields.

Mirando, Tex.	$0.80
Salt Flat, Tex.	1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Jan. 25, 1929, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 26	$0.60	29-29.9	$0.80
26-26.9	0.65	30-30.9	0.90
27-27.9	0.70	31-31.9	1.00
28-28.9	0.75		

Glassccock, Crane, Upton, Winkler Counties	0.65
Chalkfield (Howard Co.)	0.65
Iatan district	0.93
Corsicana heavy	0.80
Luling	0.80

Carter Oil Co.

(Oklahoma and Kansas)

Jan. 24, 1929, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Jan. 24, 1929

Hutchinson and Carson Counties:

Below 32	$0.72	38-38.9	$0.96
32-32.9	0.78	39-39.9	0.99
33-33.9	0.81	40-40.9	1.02
34-34.9	0.84	41-41.9	1.05
35-35.9	0.87	42-42.9	1.08
36-36.9	0.90	43-43.9	1.11
37-37.9	0.93	44 and above	1.14

Wheeler County:

Below 30	$0.70	37-37.9	$1.03
30-30.9	0.76	38-38.9	1.06
31-31.9	0.82	39-39.9	1.09
32-32.9	0.88	40-40.9	1.12
33-33.9	0.91	41-41.9	1.15
34-34.9	0.94	42-42.9	1.18
35-35.9	0.97	43-43.9	1.21
36-36.9	1.00	44 and above	1.24

Gray County:

Below 29	$0.69	37-37.9	$1.08
29-29.9	0.75	38-38.9	1.11
30-30.9	0.81	39-39.9	1.14
31-31.9	0.87	40-40.9	1.17
32-32.9	0.93	41-41.9	1.20
33-33.9	0.96	42-42.9	1.23
34-34.9	0.99	43-43.9	1.26
35-35.9	1.02	44 and above	1.29
36-36.9	1.05		

On May 1, The Texas Co. made its first postings on Panhandle crude, adopting same gravity and price schedule as Humble.

WEST TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Winkler, Crane, Upton, Crockett, Howard and Pecos Counties	$0.65

On May 1, The Texas Co. posted same prices as Humble in West Texas, also same prices in Lea County, New Mexico.

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado Crichton, De Soto and **Cotton Valley.

Effective Jan. 26, 1929

Below 28	$0.78	36-36.9	$1.20
28-28.9	0.84	37-37.9	1.23
29-29.9	0.90	38-38.9	1.26
30-30.9	0.96	39-39.9	1.29
31-31.9	1.02	40-40.9	1.32
32-32.9	1.08	41-41.9	1.35
33-33.9	1.11	42-42.9	1.38
34-34.9	1.14	43-43.9	1.41
35-35.9	1.17	44 and above	1.44

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.75
do 24 and above	0.90
Bellevue	1.20
*Urania, La.	1.00
†East El Dorado	0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Jan. 25, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.60; 25-25.9, $0.66; 26-26.9, $0.72; 27-27.9, $0.78.

Jan. 26, Magnolia Petroleum met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Jan. 28, 1929

Below 28	$0.70	30-30.9	$0.82
28-28.9	0.74	31-31.9	0.86
29-29.9	0.78	32 and above	0.90

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Jan. 26, 1929

Grades A	$1.20	29-29.9	$1.15
Grades B:		30-30.9	1.17
Below 25	1.05	31-31.9	1.19
25-25.9	1.07	32-32.9	1.21
26-26.9	1.09	33-33.9	1.23
27-27.9	1.11	34-34.9	1.25
28-28.9	1.13	35 and above	1.27

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.

Loose Leaf Greasing Charts Devised

CHICAGO, May 10.—A chart system which shows every point to be greased or oiled on every standard make of car, has been prepared after eight months of effort by the Bonnet-Brown Sales Service, 155 East Superior St., Chicago. The idea was originated by Ray Shaw, Chicago advertising counselor, formerly with the Independent Oil Men of America.

The collection of charts is called Chek-Chart, the Grease Rite System. There is a separate chart for each make of car. Every part of the car that needs to be oiled or greased is shown by number. The points on the chassis, transmission and differential are shown in black numerals on a white background, while the engine parts are shown with white numerals on black. The numbering begins along one side of the chassis, then runs along the other side, then takes the transmission and differential, and finally the engine parts. For instance, in lubricating a Model A Ford, the attendant starts to grease at number one, and when he has greased or oiled every point from number 1 through number 28, he has done a complete lubricating job.

The charts are 9 by 12 inches, of heavy cardboard heavily varnished so it will shed water and can be easily cleaned. They can be hung on the wall near the greasing pit for ready reference. They are on a loose leaf system so they can be easily changed.

Every standard make of car put on the market since 1926 is represented on these charts. Whenever a new car goes on the market or when a new yearly model comes out, a chart will be made for it and the old one can be thrown away or the new one added and both left in the book.

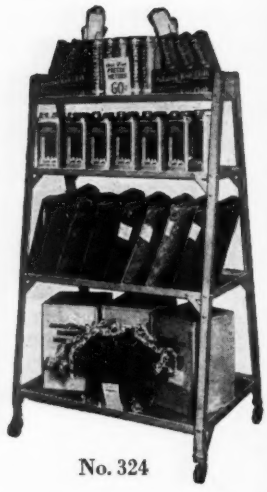
Heat Institute Begins Advertising in June

CLEVELAND, May 11.—The Oil Heating Institute has prepared a series of advertisements which will be run in June, July, August and September in the House Beautiful, House and Garden, American Home, Atlantic Monthly, Harpers and Scribners magazines. The advertisements are in four colors.

Two booklets are offered inquirers. One is entitled, "Oil Heat and the Business of Living," and the other is, "Your Guide to Oil Heating Satisfaction."

EQUIPTO

Only $13.50 for this

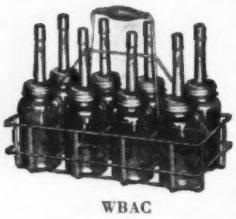


No. 324

Eye level display

You can pay more if you want to—but you can't beat this eye level display stand for quality and looks. It boosts your sales, sure as guns! All steel. Olive green baked enamel. Capacity of 200 lbs. per shelf. Shipping weight 150 lbs. Will last a lifetime. Guaranteed. Take advantage of this opportunity today! See the coupon below.

Complete oil service outfits



WBAC

This remarkable value includes 1 rust-proof wire basket, and 8 quart bottles with spouts and caps. Non-leakable, dustproof, regulated oil flow. 3 sets, $8.85; 6 sets, $16.75; 12 sets, $32.25. Order the number of sets you need today!

All prices F. O. B. Aurora

AURORA EQUIPMENT CO.
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Request our "Manufacturer's Bargain Price List" of other Aurora equipment. The values are surprising! Mail this coupon NOW.

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Please ship me freight collect:

_____ Equipto Eye Level Display Stand No. 100 @ $13.50 each.

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☐ Manufacturer's Bargain Price List.

I enclose check in full to cover and have deducted regular 3% discount.

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There's Real Service in-

VITALIC

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GASOLINE PUMP-HOSE

There's a 1000 Day Warranty on Every Length

That's the reason the number of VITALIC EQUIPT Service Stations throughout the country are increasing every day

You too can cut your Service Station costs by buying VITALIC and getting the benefit of the best

Don't forget—there's a 1000 DAY WARRANTY on VITALIC GASOLINE PUMP HOSE,—your insurance against defect, misuse, accident

Locate the Branch nearest to you and pick up your requirements on a moment's notice

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DAYTON DETROIT MILWAUKEE NEW YORK
PHILADELPHIA PITTSBURGH ST. LOUIS TOLEDO

Continental Rubber Works,
Erie, Pa. U.S.A.

Post Office Drawer O

Crude Oil Prices (in Effect May 13, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Jan. 25, 1929)

‡Salt Creek 29-29.9	$0.90
" " 30-30.9	0.96
" " 31-31.9	1.02
" " 32-32.9	1.08
" " 33-33.9	1.11
" " 34-34.9	1.14
" " 35-35.9	1.17
" " 36-36.9	1.20
" " 37 and above	1.23
Elk Basin	1.36
Grass Creek light	1.36
Big Muddy	$1.28
Lance Creek	1.38
Rock Creek	1.18
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.38
‡Cat Creek, Mont.	1.48
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.53
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Elwood Terrace	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick †Kern River	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Kettleman Hills	*Santa Maria (Orcutt)	*Ventura
14-14.9	$ .70	$ .70	$ .70	....	....	$ .70	$ .70	....	$ .50	$ .50	$ .50	$ .50	$ .50	$ .70	....	$ .65	$ .70
15-15.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
16-16.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
17-17.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
18-18.9	.75	.75	.75	....	....	.75	.75	....	.50	.56	.56	.56	.56	.70	....	.70	.75
19-19.9	.80	.80	.80	....	....	.80	.80	....	.50	.62	.62	.62	.62	.75	$1.65	.70	.80
20-20.9	.85	.85	.85	....	....	.84	.84	....	....	.68	.68	.68	.68	.80	for	.70	.85
21-21.9	.89	.89	.89	....	....	.88	.88	.89	....	.74	.74	.74	.74	.85	55°	.86	.86
22-22.9	.93	.93	.93	....	....	.91	.91	.92	....	.80	.80	.80	.80	.90	gravity	.87	.87
23-23.9	.97	.97	.97	....	....	....	.94	.95	....	.85	.85	.85	.85	.95	and	.90	.90
24-24.9	1.01	1.01	1.01	1.01	....	....	.97	.98	....	.90	.90	.88	.88	.98	over	.94	.94
25-25.9	1.05	1.05	1.05	1.05	....	....	1.00	1.01	....	.95	.95	.91	.91	1.01	....	.98	.98
26-26.9	1.09	1.09	1.09	1.09	....	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	....	1.02	1.02
27-27.9	1.13	1.13	1.13	1.13	....	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	....	1.06
28-28.9	1.17	1.17	1.17	1.17	....	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	....	1.10
29-29.9	1.21	....	1.21	1.21	....	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	....	....	1.14
30-30.9	1.25	....	1.25	1.25	....	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	....	1.18
31-31.9	1.30	....	....	1.30	....	....	....	1.25	....	1.28	1.28	1.14	....	....	....	....	1.23
32-32.9	1.35	....	....	1.35	....	....	....	1.30	....	1.34	1.34	1.18	....	....	....	....	1.28
33-33.9	....	....	....	1.41	....	....	....	1.35	....	1.40	.140	1.22	....	....	....	....	1.34
34-34.9	....	....	....	1.47	$1.16	....	....	1.40	....	....	1.46	1.26	....	....	....	....	....
35-35.9	....	....	....	1.53	1.22	....	....	1.45	....	....	....	1.30	....	....	....	....	....
36-36.9	....	....	....	1.59	1.28	....	....	1.50	....	....	....	....	....	....	....	....	....
37-37.9	....	....	....	1.65	1.34	....	....	1.55	....	....	....	....	....	....	....	....	....
38-38.9	....	....	....	1.71	1.40	....	....	1.60	....	....	....	....	....	....	....	....	....
39-39.9	....	....	....	1.77	1.46	....	....	1.65	....	....	....	....	....	....	....	....	....
40-40.9	....	....	....	1.83	1.52	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	1.89	1.58	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	1.95	1.64	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except it does not post prices in Wheeler Ridge, Whittier, La Habra, Newhall and Kettleman Hills. Standard does not contract for crude testing 11-13.9 gravity, but pays 45c a barrel when purchased.

†Kern River down to 12° gravity is 50c; 11-11.9 is 45c.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	May 13	May 6
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$0.90-1.00	$0.90-1.00
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.50-4.50	$3.50-4.50
Liquid Chlorine, tank cars, wks, lb.	3.50-5.00	3.50-5.00

Compounders' Supplies

	May 13	May 6
Vegetable Oils		
Linseed carloads, spot, lb.	10.20	10.20
Tanks, spot	9.30	9.30
Soya Bean, Tanks, coast, lb.	9.00	9.00
Oleic Acid		
Distilled, tanks, lb.	10.625	10.625
Distilled, bbls, lb.	10.75	10.75
Saponified, tanks, lb.	10.75	10.75
Saponified, bbls, lb.	11.625	11.625
Lard Oils		
Prime Winter Strained, lb.	15.25	15.25
Extra Winter Strained, lb.	13.25	13.25
Extra, lb.	12.875	12.875
Extra No. 1, lb.	12.50	12.50
No. 1, lb.	12.25	12.25
No. 2, lb.	12.00	12.00
Tallow oil, lb.	11.25	11.25
Neatsfoot Oil		
Pure, bbls, lb.	14.75	14.75
Extra, bbls, lb.	12.75	12.75
No. 1 bbls, lb.	12.50	12.50
Cold Pressed, lb.	18.75	18.75
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	71	71
Light Pressed, tank cars, N.Y. gal.	65	65
White bleached, gal.	77	77
Yellow bleached, gal.	73	73
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y., gal.	51	49
Steam distilled turpentine, Savannah, gal.	48	45
Gum turpentine, N. Y., gal.	53.50	53.50
Gum turpentine, f.o.b. cars Savannah, gal.	50	50
Wood Rosin F, N. Y., bbl.	$7.30	$7.30
Wood Rosin F, Savn'h, bbl.	$6.60	$6.60
Gum Rosin B, N. Y., bbl.	$7.45	$7.45
Gum Rosin B, f.o.b. cars Savannah, bbl.	$6.55	$6.55
Rosin oil, pure, gal.	61	61
Rosin oil, compounded, gal.	50	50
Pine Tar		
Kiln burnt, bbl.	$13.00-14.00	$13.00-14.00
Retort, bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	56-63	55-63

OIL STOCKS AND FINANCES

National Petroleum News

Continental to Vote On Merger June 17

NEW YORK, May 11.—Stockholders of the Continental Oil Co. of Maine, the former subsidiary of the old Standard Oil Co. of New Jersey, will vote June 17 on the proposed merger with the Marland Oil Co.

The Continental voting trust in which the stockholders placed their shares last year will be dissolved as of May 18 to enable them to be of record at the close of business May 18.

Marland, under the plan, proposes to buy all the properties and other assets of Continental, paying 2,317,-266.35 shares of Marland stock. Continental had outstanding at the end of 1928 3,645,242 shares of capital stock. The exchange therefor will be approximately one share of Marland for 1.57 shares of Continental.

Trustees in the Continental voting trust are S. H. Keoughan, John Evans and Carl H. Pforzheimer.

After the completion of the consolidation, the name Marland will be dropped and the new company will adopt the name Continental Oil Co. E. T. Wilson, who is chairman of the board of directors of the present Continental, will be chairman of the board of the new company. Mr. Keoughan, who is president of Continental, will be chairman of the executive committee of the new company, and D. J. Moran, president of the Marland company, will be president of the new Continental.

There are rumors that the Marland-Continental consolidation is only a step toward a larger merger which is to involve a company which has distribution in more than half the states, but which does not overlap greatly with present distribution facilities of the Marland and Continental companies. The company that best answers this description is the Sinclair Consolidated Oil Corp. which E. W. Sinclair, president of that company, recently said it was not involved in any merger negotiations at present.

Cosden & Co. to Change Name

NEW YORK, May 11.—Stockholders of Cosden & Co. are to meet May 14 to vote on changing the name to Cosden Oil Co. and to increase the authorized capital stock from 500,000 to 1,000,000 no par shares. The company also has authorized 50,000 shares of $100 preferred stock.

Mexican Seaboard to Issue Stock

NEW YORK, May 10.—If the stockholders of the Mexican Seaboard Oil Co. at the annual meeting May 15 approve an increase in the authorized capital stock of the company from 1,000,000 to 2,000,000 no par shares, holders of May 29 record will be granted rights to subscribe to 248,877 additional shares at $32 a share on a basis of one share for each four held May 29.

Indiana and Imperial Increase Payments

CLEVELAND, May 11.—New capital stock of the Standard Oil Co. of Indiana has been placed on a $2.50 a year dividend basis, which is equivalent to $3.75 a share on the stock before the payment of a 50 per cent stock dividend last winter. The old stock paid $2.50 a year and extras which totaled $1 a share a year the last two years, making a total of $3.50 a share a year.

Imperial Oil, Ltd., of Canada, subsidiary of the Standard Oil Co. (N. J.), has placed its new stock on a 50-cent annual dividend basis. The old stock which was split four for one paid $1 a year regular dividend and 50 cents extra, a total of $1.50. The new stock is paying the equivalent of $2 a share on the old.

N. Y. Transit Pays $62 a Share

CLEVELAND, May 11.—New York Transit Co. has declared a stock reduction dividend of $62 payable June 3 to stock of May 20 record. Recently the company's stockholders authorized a reduction in the capital stock from 50,000 shares of $100 par value stock to 100,000 shares of $10 par value stock.

McColl Nets $1,126,059

NEW YORK, May 10.—McColl Frontenac Oil Co., Ltd., of Canada, has reported net profit of $1,126,059 for the 13 months ended Dec. 31, 1928, after all reserves and taxes, and reserve for preferred dividends on stocks of subsidiaries.

Doheny Buys Fall Ranch

LOS ANGELES, May 10.—Edward L. Doheny has bought for $168,792 the ranks of former Secretary of the Interior Albert B. Fall at Three Rivers, N. M. The ranch was sold at foreclosure auction.

Oil Mergers Must Come A. J. Byles Asserts

NEW YORK, May 11.—Reintegration of the oil industry, which has been disintegrating for 20 years, must come, Axtel J. Byles told stockholders of the Tide Water Associated Oil Co. at its recent annual meeting here. This statement has been interpreted to mean than an era of mergers within the oil industry is at hand, largely because of the necessity to conserve the crude oil supply.

"Material which could have added 40 per cent to the nation's gasoline output last year was burned in the form of fuel oil instead," Mr. Byles said. "The nation is not going to stand by and watch the wasting of one of its most valuable and most irreplaceable natural resources through overproduction and burning of the surplus in competition with coal.

"The industry wants to right itself and will do so. Progress in stabilizing the situation is being made. We must have conservation and a reintegration of the industry, which has been disintegrating for more than 20 years."

R. G. Stewart Elected Head of Lago Oil

NEW YORK, May 11.—Robert G. Stewart, president of the Pan American Petroleum & Transport Co., has been elected president of the Lago Oil & Transport Co., a subsidiary. He succeeds as head of Lago his brother James W. Stewart, who was replaced a few days ago on the board of directors by William Green.

Both the Stewarts are sons of Col. Robert W. Stewart, formerly chairman of the Standard Oil Co. of Indiana.

Phillips to Increase Stock

CLEVELAND, May 11.—Phillips Petroleum Co. has filed a certificate in Delaware to increase the capital stock from 2,500,000 to 5,000,000 no par shares.

MINNEAPOLIS, May 11.—R. R. Risser was appointed district manager at Minneapolis for the Marland Refining Co., Ponca City, Okla., on May 4. The office in Minneapolis has been changed to 1104 Foshay Tower.

Jumping the wall of competition . . .

COMPETITION has become more than a matter of national advertising and intensive merchandising. It has become something like the game of chess. Your moves are made with men—with your station attendants.

You can get the jump over the wall of competition if your station attendants know how to sell more oil and grease. How Penn-Empire encourages this movement is contained in our sales plan for 1929. This sales plan is your sales plan.

Penn-Empire recognizes no competition so far as quality of product is concerned. This 100% pure Pennsylvania product—re-distilled, Sharples-processed, completely de-waxed—represents the highest quality motor oils that it is possible to produce.

The highest quality oils promoted by intensive "station—man selling"—that's the story which is yours for the asking.

Lubrication Chats with the Station Man

Meeting Types of Customers

These periodic bulletins tell the station attendant how to sell more oil, grease and gasoline! Do you want your men to get these helps?

EMPIRE OIL WORKS, INC., Oil City, Pa.

Refineries: Reno, Pa. Tidioute, Pa.

PENN-EMPIRE

MOTOR OILS and GREASES

"Speed with Safety"

Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 11 Sales	First	High	Low	Last	Change
43⅞	27⅛	42⅝	30⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Apr. 30, 29	8,400	33¾	33¾	30⅝	31⅜	— 2⅝
85	51¼	64¾	44	(sh) 209,180	N.P.	American Republics Corp.	....	.....	8,400	56	57⅜	53	54½	— 1
5 ⅜	37½	47¼	43	$56,000,000	$25	Associated Oil	50cQ	Mar. 31, 29	60	45	45¼	45	45	0
62½	50	71½	53½	50,000,000	25	Atlantic Refining	‡25cQ	Mar. 15, 29	297,000	69⅜	*71½	67½	71	+ 1¾
118¼	114½	117¾	114	20,000,000	100	do pfd.	$1.75Q	May 1, 29	.....	...	...	...	...	...
53	20	49⅛	38⅛	47,261,125	25	Barnsdall Corp. A	50cQ	May 6, 29	228,400	45⅛	*49⅛	44⅛	47½	+ 2½
51⅛	20	49	38⅛	300,525	25	do B	50cQ	May 6, 29	.....	...	...	...	...	...
24½	12¼	28½	20	(sh) 956,075	N.P.	Beacon Oil	....	.....	4,900	23⅛	23½	23	23½	+ ⅛
36	25¼	30	26¾	$51,524,150	$25	California Petroleum	....	Jan. 1, 29	.....	...	...	...	...	...
94⅞	68	81¼	63	21,031,400	100	General Asphalt	....	.....	48,400	80¼	82	77½	77⅞	— 3⅛
141	110¾	124½	104½	6,628,200	100	do pfd.	$1.25Q	Mar. 1, 29	1,100	122½	*124½	122½	123¼	+ 1¼
167	79	107	80⅛	25,000,000	100	Houston Oil	....	.....	15,000	99¼	100	96	96⅛	— 3⅛
38⅜	21¾	39⅛	30	(sh) 1,333,157	N.P.	Independent Oil & Gas	50cQ	Apr. 30, 29	77,100	37⅞	*39⅛	37½	38⅞	+ 1⅛
39⅜	9	52⅝	29	$4,299,190	$10	Indian Refining	....	Dec. 15, 20	69,400	49½	50¼	47	47¾	— 1⅛
37¼	8½	48¾	28	4,550,110	10	do ctfs.	.....	.....	31,800	46½	46⅞	44½	44½	— 1⅛
185	140	165	160	1,977,700	100	do pfd. new	$1.75Q	Apr. 1, 29	.....	...	...	...	...	...
39⅛	27⅜	33½	26¼	3,992,387	N.P.	Lago Oil & Transport	....	May 2, 27	1,200	30⅞	30⅞	29½	30⅛	— ¼
19¾	9⅜	18	12¾	(sh) 1,187,298	N.P.	Louisiana Oil Refining	.....	.....	40,600	14¼	15½	14	15	+ ⅞
96	78	100	89	$4,000,000	$100	do pfd.	$1.62½	May 15, 29	40	87½	90⅛	90	90⅛	— ⅜
25½	12½	18½	12	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	1,300	17¼	17¼	16½	16¾	— ¼
49¾	33	47⅞	35⅞	(sh) 2,316,897	N.P.	Marland Oil Co.	....	Mar. 31, 27	46,500	40½	40⅝	38¼	39⅜	— ¾
360	250	295	205	$45,942,800	$100	Mexican Petroleum	‡$3Q	Apr. 20, 29	30,225	...	225	222	222	—22
...	...	...	...	12,000,000	100	do pfd.	$2Q	Apr. 20, 29	.....	...	...	...	...	...
73	4⅜	69⅜	41½	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15. 24	46,600	57¼	57⅜	52½	53¾	— 2¼
44½	25⅛	39⅞	30½	(sh) 1,857,461	N.P.	Mid-Continent	50cQ	May 15, 29	43,000	35⅞	36¾	35	36⅛	+ ⅜
120½	103¼	121	120¼	$6,718,000	$100	do pfd.	$1.75Q	Mar. 1, 29	.....	...	...	...	...	...
7⅜	2⅜	5⅛	3¾	23,849,720	10	Middle States	....	July 1, 23	21,700	4⅛	4¾	4	4¼	+ ⅛
5⅞	1½	3½	2¾	5,950,500	10	do ctfs.	....	.....	5,700	2⅞	3¼	2⅝	2⅞	— ¼
2¼	1	1½	1	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	10,600	1⅛	1⅛	1	1	— ⅛
55½	38¼	63	41⅛	$50,000,000	$50	Pan American P. & T.	....	Oct. 20, 27	4,900	62⅝	62⅝	59¾	60	— 3
58½	37¾	66¾	40½	121,101,400	50	do B	....	Oct. 20, 27	274,700	64⅝	*66¾	61½	63¼	— 3⅛
28⅜	15½	17½	14	(sh) 400,000	N.P.	Pan American Western B	....	Jan. 30, 27	.....	...	...	...	...	...
21⅜	11½	15¼	9½	(sh) 199,370	N.P.	Panhandle P. & R.	....	.....	2,200	13	13¾	12¾	13½	+ ½
106¼	70	76	47½	$2,935,200	$100	do pfd.	.....	July 2, 23	.....	...	...	...	...	...
53⅞	35¼	47	37¼	(sh) 2,406,803	N.P.	Phillips Petroleum	37½cQ	Apr. 1, 29	16,100	42¾	43⅛	41½	42	+ ⅜
5¼	½	3⅜	2¼	$29,622,925	$25	Pierce Oil	....	.....	4,800	2⅝	2¾	2½	2¾	+ ⅛
50	16¼	51½	30	15,000,000	100	do pfd.	....	Feb. 1, 22	1,000	43½	43½	40	40	— 4
6⅜	3½	5⅞	4⅝	(sh) 2,500,000	N.P.	Pierce Petroleum	....	.....	9,500	5¼	5¼	4⅞	5¼	+ ⅛
64⅝	59½	65⅝	58	$60,636,450	$25	Prairie Oil & Gas	.....	Aug. 31, 27	9,400	60¼	60½	59¼	59¾	+ ⅛
...	...	61½	53⅝	101,250,000	25	Prairie Pipe Line	‡75cQ	Mar. 31, 29	11,800	61⅜	*61½	59½	60	— 1
29¾	16	25⅞	18¼	37,450,850	50	Producers & Refiners	....	Sept. 15, 23	3,200	21½	21⅞	21	21¼	0
49¾	41	45¾	38⅛	2,845,350	50	do pfd.	....	May 1, 25	80	43	43½	41½	43½	+ ½
31¼	19	30⅜	23½	75,959,250	25	Pure Oil Co.	25cQ	Mar. 1, 29	168,400	29¾	*30¾	29¼	29¼	+ ⅛
119	108	115½	112	13,000,000	100	do 8% pfd.	$2Q	Apr. 1, 29	230	113½	114½	112½	113½	— ½
56	23½	49⅜	40	47,127,725	25	Richfield Oil	50cQ	May 15, 29	40,400	47	47½	45⅝	47¼	+ ¼
...	...	42½	33¾	(sh) 1,200,000	N.P.	Rio Grande Oil Co.	‡$1S.A.	Jan. 25, 29	40,400	37	37⅞	36¼	37	— ¼
64	44⅝	55¾	31¾	(sh) 546,646	$13.40	Royal Dutch N. Y. shares	$1.336	Feb. 8, 29	2,000	52⅛	52¾	52	52	— ⅜
57½	39⅜	55¾	43	(sh) 65,203,000	£2	Shell Transport & T.	96.4c	Feb. 8, 29	.....	...	...	...	...	...
39⅛	23¼	31¾	26	12,254,979	N.P.	Shell Union Oil	35cQ	Mar. 31, 29	31,500	30⅜	30⅝	29⅛	29½	— ⅝
27¼	18¼	34¼	18¼	$8,357,280	$10	Simms Petroleum	40cQ	Mar. 15, 29	80,400	31⅝	33⅛	29⅞	30	— 2⅜
46¾	17⅜	45	36	5,494,095	N.P.	Sinclair Consolidated	‡50cQ	Apr. 15, 29	294,500	39½	39¾	37¾	38⅝	— ⅝
110	102½	111	107¾	$16,025,200	$100	do pfd.	$2Q	May 15, 29	200	108⅛	108⅛	108⅛	108⅛	+ ⅜
42⅝	25	46½	32⅛	27,396,590	25	Skelly Oil Co.	50cQ	Mar. 15, 29	67,300	46½	*46½	43⅜	43½	— 2¾
80	53	81⅞	64	(sh) 13,016,435	N.P.	S. O. California	62½cQ	Mar. 15, 29	6,200	79⅝	*81⅞	78¾	79½	+ 1⅝
59¾	37¾	62⅜	48	$612,095,850	$25	S. O. New Jersey	‡25cQ	Mar. 15, 29	178,500	62⅛	*62⅜	60	62	+ ⅜
45½	28¾	45¾	38⅝	434,094,575	25	S. O. New York	40cQ	Mar. 15, 29	15,800	43⅞	43⅞	42⅜	42⅞	— ⅜
77	31½	68½	57	(sh) 1,297,847	N.P.	Sun Oil	25cQ	Mar. 15, 29	5,300	64⅜	64⅝	63⅛	64⅜	+ ½
110	100	105½	100	$5,000,000	$100	do pfd.	$1.50Q	Mar. 1, 29	20	...	103½	103	103	+ 1¼
14¼	2½	12	7	(sh) 1,304,698	N.P.	Superior Oil Corp.	....	Dec. 20, 20	40,500	8⅞	8⅞	8¼	8¼	— ⅜
74¾	50	68½	57¼	$211,082,925	$25	The Texas Corp.	75cQ	Apr. 1, 29	51,200	67	67⅜	64⅜	65½	— 1½
26⅜	12⅛	23⅞	16¼	8,380,340	10	Texas Pacific Coal & Oil	2½%s	Mar. 20, 29	26,400	21	21	19¾	20⅝	+ ⅜
41½	19⅜	38½	27½	(sh) 2,179,275	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 29	14,800	35¼	38	35	37	+ 1¾
100⅜	86¾	97½	90⅛	$20,321,000	$100	do 5½% pfd.	$1.25Q	May 15, 29	1,900	95¾	95¾	95	95½	+ 1
25	14¾	23⅜	17½	(sh) 4,877,976	N.P.	Tide Water Associated	....	Aug. 1, 27	202,000	20¼	*23⅜	20⅛	22	+ 2
91¾	81⅞	90	86	$72,989,200	$100	do pfd.	$1.50Q	Apr. 1, 29	1,700	88⅛	89	88⅛	89⅛	+ 1
14½	6¾	13	9	(sh) 3,842,029	N.P.	Transcontinental Oil	....	.....	410,500	14	14¼	11¼	13	+ 2½
58	42¾	54⅛	46	$40,858,375	$25	Union Oil of California	50cQ	May 10, 29	11,200	50¾	51¼	49⅝	50⅝	— ¾
128⅛	110	150¼	121⅞	31,101,200	100	Union Tank Car Co.	$1.25Q	Mar. 1, 29	500	140	140	140	140	— 6
44⅞	26	42¼	32⅝	(sh) 488,359	N.P.	Warner Quinlan	50cQ	Apr. 2, 29	10,800	35⅛	35⅞	33⅝	33⅞	— 1⅜
38	20⅛	37⅜	30¼	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Apr. 20, 29	3,200	35¾	36	35	35	— ⅝
22⅛	17¼	29¾	19½	(sh) 428,967	N.P.	Wilcox Oil & Gas	....	May 10, 28	10,200	28	28¾	26½	26⅞	— ½

*New High †New Low XEx-dividends ‡Also extras s-Stock Total Sales 8,611,255

Pittsburgh Stock Exchange

Transactions Week Ended May 10, 1929

	Sales	High	Low	Last	Change
Ark. Nat. Gas....	44,472	8¼	6¾	8	+¼
do pfd.....	4,976	8¼	8	8	—¼
Devonian Oil....	1,175	10½	10	10½	+ ½
Dixie Gas & Util..	7,710	21	14	19	14
do pfd.....	250	76	75	76	+1
Pet. Explor.....	100	30	30	30	—1
Plymouth Oil....	975	25¼	24½	25	0
Salt Creek Cons..	80	4	3½	3½	— ¼
Wiser Oil.....	68	13	13	13	0

Financial Notes

Tide Water Oil Co.—J. Byron Deacon has been elected to the board of directors. Retiring directors were re-elected at the annual meeting.

Southern Pipe Line Co.—Stockholders have approved the sale of part of the company's pipe line system from the Pennsylvania-West Virginia line to Millway, Pa., and between Matthews Farm and Philadelphia to the Manufacturers Light & Heat Co. for $955,056. The company plans to distribute a $10 a share special dividend to stockholders.

The Texas Co.—O. L. Coppage, vice-president in charge of sales of the California subsidiary has resigned and will retire from the oil industry.

Atlantic Refining Co.—Stockholders May 7 will vote on an employes' stock purchase plan to be operative for five years from July 1. The plan calls for the issue of 133,333 common shares.

Amerada Corp.—All retiring directors were re-elected at annual meeting.

Arkansas Natural Gas Corp.—All retiring directors were re-elected at annual meeting. All officers were subsequently re-elected.

Marland Oil Co.—40,000 additional shares of capital stock have been listed on the New York Stock Exchange.

Cleveland Stock Market

May 10	Par Value	Bid	Asked
Canfield Oil Co	$100	125	143
do pfd	100	103	...
Fred G. Clark	10	9	10½
National Refining	25	36	37
do pfd	100	...	137½
Paragon Refining	25	23	25
do pfd	N.P.	43½	44
do ctfs. of deposit	...	22½	24½

xEx dividend

Oil Company Earnings

Year	1928	1927
Maracaibo Oil Explo.	$32,126	$71,271
First Quarter	**1929**	**1928**
Amerada Corp.	$50,762	$559,893
Crystal Oil Refining.	†*40,739	.....
Houston Gulf Gas..	‡401,444	.....
Louisiana Oil Refg..	‡239,035	145,038
Panhandle Producing	32,919	*12,532
Rio Grande Oil....	1,263,325	.....
Simms Petroleum...	*57,351	*168,010
Warner-Quinlan....	211,207	141,251

*Loss †Before reserves ‡Before federal taxes

Skilled Supervision

Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

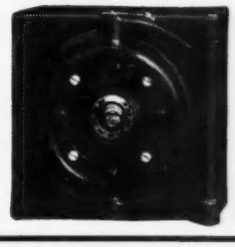
District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

Is this burglar spending your money?

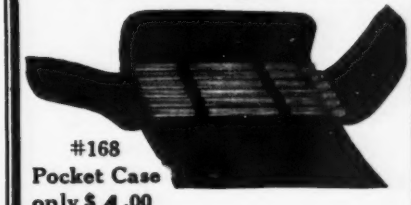
He has made another successful raid upon a filling station. The money he is spending upon Wine, Women and Automobiles belongs to the owner of a station in a town a hundred miles away. Will he be spending your money next week? Not if you install a York Burglary Chest,

YORK SAFES

YORK SAFE *and* LOCK COMPANY
York, Pa.

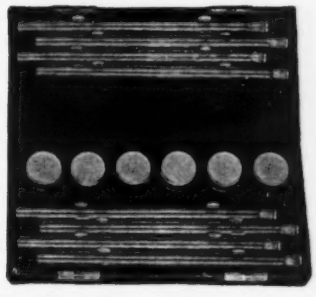


Pocket Sample Cases



#168 Pocket Case only $4.00

Sturdily constructed from black cobra grain cowhide. Lined with red plush. Contains six bottles. 9"x1½".



175—This case contains eight 9-inch bottles and six grease jars. Made from black cobra grain cowhide, lined with red plush. Has two serviceable nickel slide catches, price including metal capped corks, only $7.00

Less 10% for Cash
Other styles in our FREE Catalog

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Houston, Texas.....1514 Petroleum Bldg.
Tulsa, Okla.....Philtower Bldg.
Los Angeles, Cal.....1031 So. Broadway

Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 11 Sales	First	High	Low	Last	Change
22⅜	14⅞	18¾	14¾	£4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	8,300	15	15⅛	†14¾	15	0
21¼	15	18	14½	.....	....	do certificates	.....	.....	500	15	15	15	15	0
20½	14⅜	17	14	.....	£ 1	do cts. non-voting	.....	.....	800	14⅛	14¾	14	14½	0
5	1¼	2⅜	1⅛	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	800	1½	1⅞	1½	1⅞	+ 7/8
9¾	3¼	4⅛	3¾	$10,000,000	$50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
56	44½	46½	38	$1,000,000	25	Borne-Scrymser	‡$1S.A.	Apr. 15, 29	200	41¾	41¾	40	41¾	0
76	58	74¼	67	10,000,000	50	Buckeye Pipe Line	‡$1Q	Mar. 15, 29	400	71	71	70⅝	70⅝	+ ¾
161	117¼	170¼	140⅛	3,000,000	25	Chesebrough Mfg	‡$1Q	Mar. 31, 29	200	170	170	169¾	169¾	— 1½
23	16	29	17⅜	36,123,350	10	Continental Oil	.....	Dec. 15, 27	18,400	23⅜	24¾	22⅝	22⅝	— 1⅝
17½	9½	11⅜	8⅜	.....	N.P.	Creole Petroleum	.....	.....	3,800	9	9	8⅝	8⅞	— ⅛
82	67	75¾	62	1,500,000	50	Cumberland Pipe Line	‡$1Q	Mar. 15, 29	.....	.....	.....	.....	.....	.....
88	64⅛	70½	59½	5,000,000	100	Eureka Pipe Line	$1Q	June 1, 29	.....	.....	.....	.....	.....	.....
13	4¼	6⅝	5½	16,000,000	100	Galena Signal Oil	.....	June 30, 25	.....	.....	.....	.....	.....	.....
86	26	90	74½	4,000,000	100	do new pfd	.....	June 30, 26	80	74½	74½	†74½	74½	— 1/2
89¾	35	88	75	2,000,000	100	do old pfd	.....	June 30, 26	10	88	*88	88	88	U.R.
114¾	59¼	124¼	89⅝	73,685,700	25	Humble Oil & Refining	‡30cQ	Apr. 1, 29	21,800	123¼	*124½	117¾	120	— 1⅜
290½	176½	340½	285	20,000,000	100	Illinois Pipe Line	$10S.A.	Dec. 15, 28	400	340	340	339	339	— 1½
104	56¾	119⅝	88	(sh) 6,605,442	N.P.	Imperial of Canada	‡25cQ	Mar. 1, 29	2,400	116¼	117⅜	115	115¾	— ¾
91⅞	74⅝	97	81¼	$5,000,000	$50	Indiana Pipe Line	‡$1Q	May 15, 29	700	90¼	92¾	90¼	92¾	+ 1¾
55	35	65½	46⅛	(sh) 7,123,544	N.P.	International Petroleum	25c	Mar. 15, 29	4,900	54¾	55	53	53¼	— 1
32⅜	19⅜	25⅞	21⅜	$6,363,350	12.50	National Transit Co	‡25cQ	Mar. 15, 29	2,000	24½	24½	23½	24	— ½
75	38½	85	72	5,000,000	100	New York Transit	.....	July 15, 26	350	83½	85	83½	84¾	+ 2¾
69	56½	63	54	2,000,000	50	Northern Pipe Line	$2S.A.	Jan. 2, 29	500	59	60	58⅞	59½	+ ½
83½	58½	74⅜	64⅛	60,000,000	25	Ohio Oil Co	50cQ	Mar. 15, 29	900	70½	71	70	70⅞	+ ⅜
84	28	44½	30	10,000,000	25	Penn Mex. Fuel	75c	Dec. 16, 28	100	31	31	31	31	+ ¾
220	167	50	40	4,000,000	25	Solar Refining	$5S.A.	Dec. 20, 28	300	43⅞	44	43⅞	43⅞	— 1
19	12	22½	13	1,000,000	10	Southern Pipe Line	$1	Mar. 1, 29	1,000	21⅛	21⅞	20⅛	20⅞	— ⅛
71⅞	36¾	60¼	40⅜	30,000,000	25	South Penn Oil	50cQ	Mar. 31, 29	2,500	57⅜	58⅝	56½	57	— 1½
102	70	70	62¾	1,750,000	50	South West Pa. Pipe Lines	$1	Apr. 1, 29	50	68	68	68	68	+ ¼
95⅞	70⅞	103¼	56	348,175.069	25	S. O. Indiana	‡62½cQ	Mar. 15, 29	34,500	59⅝	60⅛	58⅛	58⅞	— ⅛
27¾	15	21⅞	18	8,000,000	25	S. O. Kansas	.....	June 16, 24	500	19⅛	19⅜	18⅞	18⅞	— ⅜
49	44	45¼	38	25,654,516	10	S. O. Kentucky new	40cQ	Mar. 31, 29	6,800	39¾	40	38⅝	38⅞	— ⅛
54⅜	39⅞	49¾	45½	4,649,225	25	S. O. Nebraska	‡62cQ	Mar. 20, 29	100	49⅛	49⅛	49⅛	49⅛	— ⅝
134	71	129	110¼	14,000,000	25	S. O. Ohio	62½cQ	Apr. 1, 29	700	129	*129	127	127¾	— ¾
125	116	124½	116¼	7,000,000	100	do pfd	$1.75Q	Mar. 1, 29	.....	.....	.....	.....	.....	.....
23½	16	18	15	861,466	25	Swan Finch Co	30c	Jan. 15, 29	300	15	15	15	15	0
111	72	133¾	105½	126,154,000	25	Vacuum Oil	$1Q	Mar. 20, 29	5,300	126⅜	126⅜	123⅛	124½	— 1

*New High †New Low ‡Also Extras

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Week Ended May 11 Sales	First	High	Low	Last	Change
1½	.53	.72	.375	$ 5	Amer. Cons. Oilfields	12,800	½	1/16	†⅜	½	0
9½	3⅛	8⅝	4½	N.P.	Amer. Maracaibo	2,600	5	5	†4½	4⅞	+ ¼
4½	2¼	5	1⅜	$10	Argo Oil	8,500	5	5	3	3¾	— ½
3¾	3⅜	8½	3¾	10	Arkansas Nat. Gas	34,500	7¾	*8½	6⅝	8	+ ¼
55	32¾	62	50	N.P.	British American Oil	100	49½	49½	49½	49½	— ¼
23⅞	3¾	4⅜	2⅝	25c	Carib Syndicate	4,600	3¼	4	3⅛	3¾	+ ⅝
90⅞	54	121⅞	88⅜	$25	Cities Service	28,800	116⅜	116¾	115⅝	116½	0
					do new	23,600	29½	29½	28⅞	29¼	— ¼
103½	94¼	98¼	88⅜	100	do pfd	1,800	98	98½	97⅞	98½	+ ⅜
9⅜	8⅞	9¾	8⅞	10	do pref. B	200	9	9	9	9	— ¼
97	88½	95	92½	100	do pref. BB	100	94	94	94	94	0
35¼	27⅜	....	....	10	do Bankers	.....	.....	.....	.....	.....	.....
2¼	1	1½	1⅛	1	Colombia Syndicate	2,400	1⅜	1¼	1⅛	1¼	+ ⅛
17¾	9¾	15	8¼	....	Colon Oil	2,200	9¼	9½	9	9¼	0
8⅞	6¼	11⅜	6⅞	10	Consolidated Royal	1,100	7⅛	7⅞	7⅛	7⅞	— ⅛
3¼	.76	2⅜	1⅜	N.P.	Crown Central	1,400	1⅞	1⅞	1¾	1¾	0
15	6¾	11⅜	8	N.P.	Crystal Oil	.....	.....	.....	.....	.....	.....
50	48	51¾	51¾	$100	do pfd	.....	.....	.....	.....	.....	.....
33½	8¼	26	15	N.P.	Darby Petroleum	2,700	16¾	16¾	†15	15½	— 1½
13½	7⅞	....	....	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2⅞	1	5	2	N.P.	Derby Oil & Refining	700	4	4⅜	3¾	4⅜	+ ⅞
21⅛	7½	....	....	N.P.	do pfd	.....	.....	.....	.....	.....	.....
2	1	....	....	N.P.	Gibson Oil	.....	.....	.....	.....	.....	.....
.53	.15	....	....	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
165	101¾	170⅞	142¾	$25	Gulf Oil Corp	49,500	162⅞	*170⅞	160⅛	170⅞	+ 7⅞
7½	5⅝	7½	4½	5	Homaokla Oil	3,800	4⅞	5	4¾	5	0
3⅜	1	2¾	1¼	10	Intercontinental Pet.	52,400	2¼	2¾	2	2¾	+ ½
3	⅛	3⅜	1½	N.P.	Kirby Petroleum	31,800	1⅞	2	†1½	2	0
9⅜	5⅛	6⅜	5	N.P.	Leonard Oil & Dev	3,600	5	5	5	5	0
43⅜	20	38⅞	24¾	N.P.	Lion Oil & Refg	9,900	35⅜	*38⅞	35⅜	37½	+ 2
69⅛	48⅛	74⅛	67	$25	Lone Star Gas	500	73⅞	73⅞	71⅞	71⅞	— 3
1⅞	.50	1⅜	.50	1	Magdalena Syndicate	7,100	1/16	1/16	½	1/16	0
48½	32	38½	25	N.P.	Margay Oil	.....	.....	.....	.....	.....	.....
40½	40⅛	....	....	$10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
8	2¾	6¾	3¾	N.P.	Mexico-Ohio Oil	7,200	5	5	5	5	0
.74	.20	....	....	$10	Mexico Oil	.....	.....	.....	.....	.....	.....
1⅜	.76	1⅛	1⅛	1	Mountain & Gulf	1,600	1⅛	1¼	1⅛	1¼	+ ⅛
28⅞	19⅛	22⅞	17⅜	10	Mountain Producers	6,800	18½	18½	†17⅜	17¾	— ¾
5⅝	4¼	5	3⅞	5	New Bradford	1,300	4	4⅛	4	4⅛	+ ⅛
5½	3	3⅛	3	10	New England Fuel	.....	.....	.....	.....	.....	.....
11⅞	7⅛	9⅜	6½	1	New Mex. & Ariz	1,000	6¾	6⅞	†6½	6½	0
15½	11½	....	....	25	New York Petrol	.....	.....	.....	.....	.....	.....
40	39½	....	....	....	North Amer. Oil Cons.	.....	.....	.....	.....	.....	.....
13¼	8½	11⅝	8¾	N.P.	North Cent. Texas	200	11	11½	11	11	— ⅛
....	....	19¼	14⅝	N.P.	Oil Stock, Ltd. A	4,300	15	18	15	17⅞	+ 2¾
....	....	17⅞	15	N.P.	do B	800	16¼	17	16¼	17	+ ⅛
26¼	20	23¼	18	N.P.	Pacific Western Oil	900	18⅝	18⅝	18⅛	18⅛	— ½
6	2¼	3½	2	N.P.	Pandem	1,200	2⅛	2¼	2⅛	2¼	+ ¼
15⅝	8½	10¼	7	N.P.	Pantapec	1,300	7¼	7¼	7	7⅛	0
20	10¾	....	....	$25	Paragon Refg. B. ctfs	.....	.....	.....	.....	.....	.....
.09	.04	....	....	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
7¾	4⅞	7⅜	4⅝	$10	Pennok Oil	.....	.....	.....	.....	.....	.....
....	....	34½	27¼	N.P.	Petroleum Corp	4,200	29⅝	30	28⅝	29½	— ⅜
5⅜	3⅛	....	....	$5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
31⅜	26½	30	23	N.P.	Plymouth Oil	4,200	25¼	26½	24½	25	0
18	8	16	11¼	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
13	4⅛	8⅛	5	N.P.	Reiter-Foster	2,500	5¾	6½	5¼	6½	+ 1⅜
31½	23¼	25½	24⅛	$25	Richfield pfd	800	25⅛	*25½	25	25	— ¼
....	....	29	23½	....	Root Refining pfd	400	27¾	27¾	26½	26½	— ½
12	4⅝	11	6⅝	N.P.	Ryan Consolidated	200	....	8⅜	†6⅝	8⅜	+ 1⅛
7¼	5½	5⅞	3⅛	$10	Salt Creek Cons	200	3½	3½	3½	3½	+ ¼
35	23¼	25⅞	19⅛	10	Salt Creek Prod	1,600	19½	20⅞	†19⅛	20	— ¼
3½	1	2¼	1⅜	5	Savoy Oil	.....	.....	.....	.....	.....	.....
40	27	33¼	32	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
....	....	23	16⅝	N.P.	Texon Oil & Land	7,600	21	21¾	20½	21½	+ ½
22⅜	13	16⅞	11⅝	$10	Tidal Osage	1,100	14	15	14	15	+ ⅛
21¼	13⅛	16½	10⅛	10	do non-voting	4,700	14	15	13⅝	15	+ 1⅞
93¾	75	90	80	100	Transcontinental pfd.	1,800	92	109¾	90	107	+18
74¼	18	69	66	10	Venezuela-Mexico	.....	.....	.....	.....	.....	.....
9⅛	4¾	6⅛	4¼	5	Venezuelan Petrol	1,100	4¾	4¾	4½	4½	— ⅛
8¼	4⅞	9¼	5¾	1	Woodley Petroleum	600	6	6	5¾	5¾	+ ¼
⅜	⅛	5⅜	2⅝	25	Y Oil & Gas	300	2¾	2¾	†2⅝	2⅝	— ⅛

*New High †New Low

New York Curb Bonds

Week Ending May 10

	High	Low	Last	Change
Beacon Oil 6s '36	111½	111	111½	+ ½
Cities Serv. G. 5½s '42	91¼	88¾	90½	0
Cities Serv. G. P. 6s '43	96	95	95¼	0
Cont. Oil 5⅛s '37	95⅛	95	95	0
Empire O & R 5½s '42	91½	90⅛	90½	— ⅜
Gulf Oil 5s '37	100⅜	99¾	100	— ½
Gulf Oil 5s '47	101	100½	100½	— ½
Indep. Oil 6s '39	121½	116½	119	+3
Richfield Oil 5½s '31	101	100½	100⅛	—1⅜
Sun Oil 5½s '39	100½	100¼	100¼	0
Valvoline Oil 7s '37	105	103½	103½	—1½

Oil Dividends

	Amount	Payable	Stock of Record
Atlantic Refining q	25c	June 15	May 21
do extra	25c	June 15	May 21
Imperial Oil q	12½c	June 1	May 31
N. Y. Transit special	$62	June 3	May 20
Ohio Oil q	50c	June 15	May 15
Pure Oil q	37½c	June 1	May 10
Simms Petroleum	40c	June 15	May 31
S. O. Indiana q	62½c	June 15	May 16
S. O. Nebraska q	62½c	June 20	May 27
do extra	25c	June 20	May 27
S. O. New York q	40c	June 15	May 10
Sun Oil q	25c	June 15	May 25
Union Tank Car q	$1.25	June 1	May 18
Vacuum Oil q	$1	June 20	May 31

New York Bonds

Week Ending May 10

	High	Low	Last	Change
Assoc. Oil gold 6s	102	101½	101½	— ½
Atlantic Refg. deb. 5s	101	100	101	0
Cal. Pet. 5s	99¼	98	98	—1
Cal. Pet. 5½s	101¼	100½	101	0
General Asphalt 6s	105¾	105	105	0
General Pet. 5s	100½	100	100⅛	— ⅝
Humble Oil & Refg. 5s	100¼	100	100	— ⅛
Humble Oil & Refg. 5½s	101½	100⅞	101	0
Pan Amer. P & T 6s	108½	107¾	108	0
Pan Amer. P & T 6s	98	96½	96½	— ⅜
Phillips Pet. 5½s	91	90	90½	— ¼
Prod. & Refg. 8s ex-war.	109½	109½	109½	+ ½
Pure Oil 5½s	98½	98	98⅜	— ⅛
Shell Union Oil 5s	97¾	96⅝	97¼	— ½
Sinclair Con. Oil 7s	103	102	102⅜	— ⅜
Sinclair Con. Oil 6½s	101½	100	100	—1
Sinc. Con. Oil 6s D	99¼	99	99	— ⅛
Sinclair Con. Oil Crude 5½s	96½	95	95	—1½
Sinclair Pipeline	93⅞	93¾	93⅞	— ⅛
Skelly Oil 5½s	94½	94	94	— ⅜
S. O. N. Y. 4½s	96⅜	96¼	96¼	— ⅛
S. O. N. J. 5½s	102	101⅛	102	+1
Union Oil of Calif. 6s A	106¼	106¼	106¼	0
Union Oil of Calif. 5s C	98⅜	97⅜	97⅜	—1⅛
White Eagle Oil 5½s	102	101½	102	+ ¼

Coin Pump Pays At Station

CHICAGO, May 10.—Making the night hours pay at a service station is a problem in smaller towns where there is not enough business to warrant having an attendant on duty all night.

The Corn Belt Oil Co., Marshalltown, Iowa, solved this problem at one of their Marshalltown stations by installing an automatic (coin-vending) pump.

The station has attendants on duty from 7 a.m. until 7 p.m. During the twelve night hours, the automatic pump vends gasoline. During the summer season of 1928 (May, June, July, August and September) the average gross sales per night at this station were $12.37, or with the prevailing price of gasoline averaging at 20 cents a gallon, the automatic pump sold almost 62 gallons a night.

All the motorist has to do at the automatic pump is to put the hose in his tank, put in his money, turn a small dial and the machine does the rest. The coin falls down into the pump, operates the machinery which starts the pump working and then drops into a coin box.

Immediately the hose is hung back upon its hook, it makes an electrical contact and a one-third horsepower motor, fixed in the base of the pump fills the visible bowl. When the gasoline gets to the correct level, it pushes a float which releases the contact and the motor stops. The pump is again ready to serve the customer and the operation takes only about 30 seconds.

According to the inventor no slug will work this machine. The pumps are so strongly made and the coin box so well protected that none of them have been robbed so far.

Accidents Reduced

CLEVELAND, May 11.—Accidents have been cut down 84 per cent in frequency and 93 per cent in severity at the Wood River plant of the White Star Refining Co. this year, according to the National Safety Council.

So far this year only one lost time accident has occurred at the plant. The first of June last year the company organized a safety committee at the plant. The management has backed up the committee's efforts.

Lion Lists More Stock

CHICAGO, May 11.—Lion Oil & Refining Co. has listed 50,000 additional shares of capital stock on the Chicago Stock Exchange, making the total listing 300,000 shares.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

MECHANICAL ENGINEER with broad experience as construction and maintenance engineer. Technical graduate, refinery and gasoline plant experience. Address Box 331.

WOMAN EXECUTIVE WITH MANY YEARS TRAINING in various branches oil industry seeks position. Experience includes marketing in tank cars, through bulk plants and service stations, buying, formulating sales policies and training salesmen, auditing, etc. Is expert accountant and would consider office management exclusively but prefers salesmanagement and buying. Accustomed to travel—go anywhere. References of highest order. Available about June 15th. Address Box No. 334.

SALESMAN WITH EXECUTIVE ABILITY, thirteen years experience marketing high-grade petroleum products, as well as supervising and managing filling stations and bulk plants, desires connection with opportunity to produce results. 38 years of age, married and can give best of references. Address Box 339.

CHEMICAL ENGINEER

30, single, graduate M. I. I., 5 years experience all phases refining, especially cracking processes, would make new connections as assistant superintendent or director of research.

Address Box 336

Situations Open

SUPERINTENDENT WANTED

for Oklahoma Refinery. Must have experience in Pipe Still—Dubbs Cracking—and Continuous Treating operation of West Texas Crudes.
State training, past and present connections and salary required.

Address Box 335

MID-CONTINENT REFINER has position open for man of technical training with broad experience operating pipe still, cracking and lubricating units. Must have managing ability and capable assuming responsibility. Reply should state age, qualification and salary expected which will be treated confidentially. Address Superintendent, National Petroleum News, 904 World Building, Tulsa, Oklahoma.

ENGINEER WANTED

Qualified by training and experience to handle design and engineering of complete petroleum refining plants. Position now open with old established equipment builders. Reply should give complete information of training and experience and salary.

Address Box 333

EXPERIENCED CHEMISTS

2 to 5 years refinery operating experience also chemist 1 year analytical experience. State age, training, detailed experience, references, salary expected, also small photo.

Shell Petroleum Corp., East Chicago, Ind.

Advertisers having box numbers should be addressed in care of National Petroleum News, 1213 West 3rd Street, Cleveland, Ohio, unless otherwise specified.

Patents

ROYAL E. BURNHAM
Attorney-At-Law
Patent and Trade-Mark Practice Exclusively
Continental Trust Building
Washington, D. C.

Wanted to Buy

FOUR 10-GALLON VISIBLE WET HOSE PUMPS WANTED. G & B or other standard make. One 350 to 400-gallon three-compartment truck tank. State condition and price. Address Box 332.

For Sale

SEVEN PRATT NO. 6 SAFETY NON-REFILLABLE CAN FILLERS for sale. First class condition and suitable for filling one gallon packages kerosene and light lubricating oil. Bargain. Address Box 337.

BULK PLANT FOR SALE. 72,000 gallons storage on Hudson River near New York City. Forty curb pumps, four service stations. Thickly populated section. Will consider partner with capital. Address Box 338.

OIL RECLAIMING PLANT FOR SALE within Baltimore city limits on railroad siding. One acre ground, office building, laboratory, storage tanks, stills, steam plants, sheds, loading platform. Wonderful opportunity for oil company desiring to establish Eastern branch.

M. R. Segall & Co.,
901 E. Fort Ave., Baltimore, Md.

Miscellaneous

WHAT IT COSTS

"For Sale," "Wanted to Buy," "Help Wanted," "Business Opportunities."

"Miscellaneous" classifications, set in type this size without border—10 cents a word. Minimum charge, $3.00

"Position Wanted"—5 cents a word. Minimum charge $1.00.

Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Friday preceding date of issue.

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